

## **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.

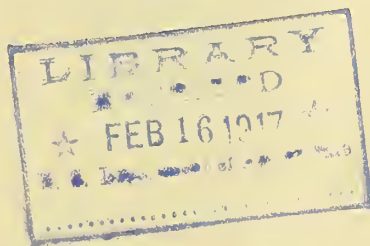


serve

# STATEMENT OF EXPENDITURES OF THE DEPARTMENT OF AGRICULTURE

FOR THE FISCAL YEAR  
ENDED JUNE 30

1916



DECEMBER 6, 1916.—Referred to the Committee on Expenditures in the  
Department of Agriculture and ordered to be printed

WASHINGTON  
1917

152,317  
1430



100

351019

## LETTER OF TRANSMITTAL.

---

DEPARTMENT OF AGRICULTURE,  
*Washington, December 4, 1916.*

SIR: As required by section 529, Revised Statutes, and the act of March 3, 1885 (23 Stat. L., 356), I have the honor to transmit herewith a detailed statement of expenditures of the Department of Agriculture for the fiscal year ended June 30, 1916.

A copy of this report has also been transmitted to the President of the Senate.

Very respectfully,

D. F. HOUSTON, *Secretary.*

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

---

## CONTENTS.

---

	Page.
Office of the Secretary.....	4
Weather Bureau.....	6
Bureau of Animal Industry.....	10
Bureau of Plant Industry.....	18
Forest Service.....	28
Bureau of Chemistry.....	34
Bureau of Soils.....	38
Bureau of Entomology.....	42
Bureau of Biological Survey.....	46
Division of Publications.....	48
Bureau of Crop Estimates.....	48
States Relations Service.....	50
Office of Public Roads and Rural Engineering.....	52
Office of Markets and Rural Organization.....	56
Insecticide and Fungicide Board.....	60
Federal Horticultural Board.....	60
Acquisition of lands under the Weeks Forestry Law.....	62
Summary of expenditures of the Department of Agriculture.....	63

# EXPENDITURES OF THE DEPARTMENT OF AGRICULTURE.

## OFFICE OF THE SECRETARY.

Classification of expenditures for the fiscal year ended June 30, 1916.

	Project.	Salaries.			Travel, station, and field expenses.	Equipment.			
		Statutory.	Lump fund.			Total.	Apparatus, instruments, laboratory.	Furniture.	Miscella- neous.
			In Wash- ington.	Out of Washington.					
1	Secretary's office.....	\$48,989.00	\$4,400.17	\$284.00	\$53,673.17	\$5,169.66	\$199.62	\$2,841.62	\$3,142.24
2	Assistant Secretary's office.....	6,516.67	75.00		6,591.67	1,186.70		60.33	110.55
3	Solicitor's office.....	89,640.64			89,640.64			335.97	411.75
4	Disbursing office.....	44,521.11			44,521.11			473.38	1,149.23
5	Library.....	29,634.73	1,643.33		31,278.06	31.20		699.67	11,332.50
6	Chief clerk's office.....	192,003.56	11,088.02	600.00	203,691.58	50.60		971.21	6,559.30
7	Total.....	411,305.71	17,206.52	884.00	429,396.23	6,438.16	199.62	5,382.18	22,705.57
8	Office of Farm Management:								
9	Administration.....	14,954.00	16,197.16		31,151.16	1,171.42	762.95	634.16	182.78
10	Farm economics.....	14,742.79	65,689.27	8,055.85	88,487.91	15,606.10	877.37	289.11	58.44
11	Farm organization.....	5,552.05	52,019.82	36,278.89	93,850.76	19,428.05	1,472.44	371.87	22.95
	Clearing and utilization of logged-off lands.		3,687.50		3,687.50	1,286.47			
12	Total.....	35,248.84	137,593.75	44,334.74	217,177.33	37,492.04	3,112.76	1,295.14	264.17
	Grand total.....	446,554.55	154,800.27	45,218.74	646,573.56	43,930.20	3,312.38	6,677.32	22,969.74

## PROJECT STATEMENTS.

### SECRETARY'S OFFICE.

Total expenditures as above..... \$72,674.66  
Outstanding liabilities, Aug. 31 (estimated).. 907.45

Total allotment..... 73,582.11

The Secretary of Agriculture administers the work of promoting agriculture in its broadest sense. He exercises general supervision and control over the affairs of the department and formulates and establishes the general policies to be pursued by its various branches..... 21,959.77

The following offices report directly to the Secretary's office:  
Information: Prepares for dissemination, by means of notices to the press and otherwise, valuable agricultural information secured from publications of the department or through oral statements of its scientists and specialists with a view to the adoption of the methods recommended by the department..... 7,834.97

Inspection: Handles personnel matters; is charged with the accounting and administrative examination of claims and the preparation of financial reports involving appropriations under the Office of the Secretary; and assists in the fiscal operations of the bureaus..... 18,768.17

Exhibits: Assists in the preparation of agricultural material for exhibition purposes at fairs and expositions of various kinds, and ships, installs, cares for, and demonstrates such exhibits..... 25,001.41

Forest appeals: Considers appeals from the decisions of the Forest Service affecting land claims and land classification matters. \$17.79

Total..... 73,582.11

### ASSISTANT SECRETARY'S OFFICE.

Total expenditures as above..... \$8,280.50

The Assistant Secretary of Agriculture becomes Acting Secretary in the absence of the Secretary and assists in the general supervision of the work of the department. 8,280.50

### SOLICITOR'S OFFICE.

Total expenditures as above..... \$91,579.18  
Outstanding liabilities, Aug. 31 (estimated).. .25

Total allotment..... 91,579.43

The Solicitor is charged by law (act of May 26, 1910) with the direction of the legal work of the department. Accordingly, he acts as legal adviser to the Secretary and the heads of the several branches of the department, conducts the law work, and represents the department in all legal matters. He approves, in advance of issue, all orders and regulations promulgated by the Secretary under statutory authority..... 91,579.43

### DISBURSING OFFICE.

Total expenditures as above..... \$46,984.79  
Outstanding liabilities, Aug. 31 (estimated).. 126.21  
Unexpended balance (estimated)..... 398.89

Total allotment..... 47,509.89



# EXPENDITURES OF THE DEPARTMENT OF AGRICULTURE.

## OFFICE OF THE SECRETARY.

Classification of expenditures for the fiscal year ended June 30, 1916.

Stationery.	Rent.	Telegraph, telephone, and postage.	Freight, express, and drayage.	Furnishing of heat, light, power, electricity.	Forage purchased in bulk.	Fuel.	Specified items not otherwise classified.	Miscellaneous supplies, services, etc.	Total.	
\$1,899.28		\$187.14	\$1,666.10					\$3,895.83	\$72,674.66	1
330.75								.50	8,280.50	2
1,151.50								39.32	91,579.18	3
802.16								38.91	46,984.79	4
								461.48	43,802.91	5
1,359.71	\$121,161.53	4,630.42	136.25	\$8,065.72	\$2,126.79	\$26,435.96	\$29,083.21	16,754.54	421,026.82	6
5,543.40	121,161.53	4,817.56	1,802.35	8,065.72	2,126.79	26,435.96	29,083.21	21,190.58	684,348.86	7
1,794.04		209.74	75.01				227.57	1,411.91	37,620.74	8
361.16							3.17	712.93	106,396.19	9
121.72	520.00							142.34	115,930.13	10
		5.86	11.38						4,991.21	11
2,276.92	520.00	215.60	86.39				230.74	2,267.18	264,938.27	12
7,820.32	121,681.53	5,033.16	1,888.74	8,065.72	2,126.79	26,435.96	29,313.95	23,457.76	949,287.13	

<sup>1</sup> Electricians' and mechanics' supplies, \$27,966.67; cleaning and toilet supplies, \$1,116.54.

<sup>2</sup> Electricians' and mechanics' supplies, \$126.06; cleaning and toilet supplies, \$104.68.

This office keeps appropriate ledgers relating to the advance and disbursement of all items of appropriation and makes payment of all vouchers and accounts properly certified by the various branches of the department..... \$47, 111. 00

### LIBRARY.

Total expenditures as above..... \$43, 802. 91  
Outstanding liabilities, Aug. 31 (estimated)... 2, 172. 54  
Unexpended balance (estimated)..... 35. 96

Total allotment..... 46, 011. 41

The library purchases all books and periodicals and supervises their arrangement and cataloguing, prepares for publication bibliographies of special subjects, and has charge of the foreign mailing lists for the department publications..... 45, 975. 45

### CHIEF CLERK'S OFFICE.

Total expenditures as above..... \$421, 026. 82  
Outstanding liabilities, Aug. 31 (estimated)... 3, 045. 21  
Unexpended balance (estimated)..... 7, 657. 17

Total allotment..... 431, 729. 20

Distributed among the several subactivities, as follows:

Chief clerk's office proper: The chief clerk has general supervision of the clerks and other employees, of the records of the Secretary's office, and of expenditures from appropriations for miscellaneous expenses, rent of buildings in the city of Washington, etc.

He is responsible for the enforcement of the general regulations of the department and is custodian of the buildings. This project includes work of the time clerk, operation of the telephones and telegraph, and provision for miscellaneous supplies and services for the department as a whole..... \$60, 407. 16

Appointment clerk's office: Prepares all papers relating to appointments, transfers, promotions, reductions, details, furloughs, and removals; keeps personal records of employees, etc..... 13, 845. 50

Supply section: Purchases stationery and miscellaneous supplies for the Office of the Secretary and the various bureaus; receives and disposes of, by sale or otherwise, all property turned in by the bureaus and offices when of no further use; and sells unused samples of products secured in connection with the enforcement of the food and drugs act and the insecticide act..... 8, 246. 54

Mail and files: Receiving, recording, and distributing mail for the Office of the Secretary; indexing, copying, filing, and dispatching correspondence of that office; includes department post office, which receives, distributes, and dispatches all mail handled between the city post office and the several bureaus..... 8, 481. 73

Watch force: Protects and watches 26 buildings occupied by the department in three shifts, covering the entire 24 hours..... 43, 650. 72

Char force: Provides for cleaning and keeping in sanitary condition the halls and toilets of the department buildings and the cleaning of rooms in the different units of the Office of the Secretary..... 7, 386. 07

Stables: Feeding, care, and driving of the horses and care of vehicles used by the Office of the Secretary and the Division of Publications.....	\$8,769.76
Rent in the District of Columbia for the various bureaus and offices of the department.	121,805.53
Power house: Supervision of the engineers and firemen, except those of the Weather Bureau, and provision of heat, light, power, and electricity for all buildings of the department in Washington, except those occupied by the Weather Bureau and the Forest Service.....	49,560.31
Mechanical force: Maintenance of mechanical shops for the repair and upkeep of the buildings, laboratories, and equipment, including electrical, carpenter, and cabinet work, plumbing, painting, rubber-stamp making, and operation of elevators.....	101,918.71
Total.....	424,072.03

## OFFICE OF FARM MANAGEMENT.

## ADMINISTRATION.

Total expenditures as above.....	\$37,620.74
Outstanding liabilities, Aug. 31 (estimated) ..	500.00
Unexpended balance (estimated).....	757.80

Total allotment..... 38,878.54

Planning and directing farm-management and farm-practice investigations, and the clerical routine incident thereto.....	38,120.74
---	-----------

## FARM ECONOMICS.

Total expenditures as above.....	\$106,396.19
Outstanding liabilities, Aug. 31 (estimated) ..	300.00
Unexpended balance (estimated).....	1,596.21

Total allotment..... 108,292.40

## WEATHER BUREAU.

*Classification of expenditures for the fiscal year ended June 30, 1916.*

	Project.	Salaries.			Travel, station, and field expenses.	Equipment.			
		Statutory.	Lump fund.			Total.	Apparatus, instruments, laboratory.	Furniture.	Miscella- neous.
			In Wash- ington.	Out of Washington.					
1	Administration.....	\$43,287.70			\$43,287.70	\$321.56		\$281.76	\$1,027.38
2	Collection and dissemination of meteorological, climatological, and marine information.	273,132.66	\$19,557.12	\$682,863.01	975,552.79	29,850.60	\$13,598.20	3,737.56	28,864.52
3	Investigation and research.....	13,317.65	22,420.00	16,842.30	52,579.95	750.70	212.87	112.42	584.85
	Total.....	329,738.01	41,977.12	699,705.31	1,071,420.44	30,940.86	13,811.07	4,131.74	30,476.75

## PROJECT STATEMENTS.

## ADMINISTRATION.

Total expenditures as above.....	\$55,576.90
Outstanding liabilities, Aug. 31 (estimated) ..	86.40
Unexpended balance (estimated).....	336.70
Total allotment.....	56,000.00

Direction of the policy and business of the bureau and supervision of its scientific activities.....	55,663.30
--	-----------

## COLLECTION AND DISSEMINATION OF METEOROLOGICAL, CLIMATOLOGICAL, AND MARINE INFORMATION.

Total expenditures as above.....	\$1,487,080.84
Outstanding liabilities, Aug. 31 (estimated) ..	55,056.73
Unexpended balance (estimated).....	7,912.43
Total allotment.....	1,550,050.00

Distributed among the several subactivities as follow:

Forecasts and warnings: Taking, recording, enciphering, telegraphing, and compiling regular meteorological observations, and caring for and maintaining the instrumental equipment therefor; issuing weather forecasts twice daily, including frost, cold-wave, storm, and small-craft warnings at the district forecast centers for their respective districts, as follow: Washington (D. C.) district: Maine, New Hampshire, Vermont, Rhode Island, Connecticut, New York, Pennsylvania, New

Jersey, Delaware, Maryland, District of Columbia, Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, West Virginia, Kentucky, Tennessee, Ohio, Indiana, Michigan, and upper and lower Lakes; Chicago (Ill.) district: Illinois, Wisconsin, Minnesota, Iowa, Missouri, Kansas, Nebraska, South Dakota, North Dakota, Montana, and Wyoming; Denver (Colo.) district: Colorado, New Mexico, Arizona, and Utah; San Francisco (Cal.) district: California and Nevada; Portland (Oreg.) district: Washington, Oregon, and Idaho; New Orleans (La.) district: Louisiana, Arkansas, Texas, and Oklahoma; issuing special wind forecasts in connection with forest-fire prevention, shippers' forecasts, and other special forecasts in the interests of manufacturing, commerce, and agriculture, at selected stations; preparing daily weather forecasts at selected stations for their immediate vicinity; also printing the same or issuing by other means, and disseminating by maps, bulletins, telegraph and telephone messages; preparing reports for the press of weather synopses, forecasts, and full and complete information concerning the current local weather conditions in all their phases..... \$948,976.63

River and flood work: Developing and improving methods of river and flood forecasting; establishing and maintaining



Detailed studies of the relation of farm income to factors of production, including cost-accounting investigations, farm-management surveys, study of farm equipment, investigations of tenant farming, the relation of farm practice to yields, the relation of geographic factors to farm enterprises, investigations of hay making and utilization, farm bookkeeping, etc. .... \$106,696.19

## FARM ORGANIZATION.

Total expenditures as above..... \$115,930.13  
 Outstanding liabilities, Aug. 31 (estimated)... 200.00  
 Unexpended balance (estimated)..... 2,778.93  
 Total allotment..... 118,909.06

Regional investigations of the practice, organization, and administration of individual farms; and studies of types and systems of farming, with a view to enable farmers to improve their systems of farm management. \$116,130.13

## CLEARING AND UTILIZATION OF LOGGED-OFF LANDS.

Total expenditures as above..... \$4,991.21  
 Unexpended balance..... 8.79

Total allotment..... 5,000.00

The working out of methods of clearing logged-off lands and their utilization for agricultural and dairying purposes..... 4,991.21

## WEATHER BUREAU.

*Classification of expenditures for the fiscal year ended June 30, 1916.*

Stationery.	Rent.	Telegraph, telephone, and postage.	Freight, express, and drayage.	Furnishing of heat, light, power, electricity.	Forage purchased in bulk.	Fuel.	Specified items not otherwise classified.	Miscellaneous supplies, services, etc.	Total.	
\$1,312.65		\$1,846.50				\$450.00	\$1,416.60	\$5,632.75	\$55,576.90	1
33,769.21	\$86,471.12	237,941.66	\$3,501.32	\$4,338.70	\$39.03	10,535.02	10,138.63	43,733.28	1,487,080.84	2
1,208.79	1,162.17	212.30	19.80	314.25		510.10		435.40	58,112.60	3
36,290.65	87,633.29	240,000.46	8,521.32	4,652.95	39.03	11,495.12	11,555.23	49,801.43	1,600,770.34	

<sup>1</sup> Printing, engraving, lithographing, and binding, \$5,801.36; mechanics', engineers', electricians' supplies, etc., \$2,372.27; cleaning and toilet supplies, \$2,869.01; subsistence and care of animals, \$512.59.

river-gauging stations and substations which observe and report rainfall, river stages, and like conditions; disseminating flood information to the public, especially to the parties and interests most directly benefited thereby..... \$169,083.32

Climatological work: Collecting, compiling, charting, and discussing climatological data of the United States; printing and promptly disseminating the information to the public, to commercial exchanges, and to all parties and organizations interested in or benefited by the service that can be promptly reached by the usual means of communication available; collecting, compiling, and furnishing to the Hydrographic Office, for publication, marine meteorological and climatological data..... 387,387.94

Agricultural meteorology: Collecting and disseminating information relative to the effect of weather and climate on crops and during the crop season, from Apr. 16 to Oct. 31; collecting daily telegraphic reports from selected substations reporting in the interests of cotton, corn, wheat, sugar, rice, tobacco, fruit, and other standard crops, for publication and dissemination to the public; issuing weekly summaries of weather and crop conditions to commercial exchanges and to all parties and organizations interested in or benefited by the service that can be promptly reached by the usual means of communication available..... 28,827.58

Vessel reporting: Collecting and transmitting marine intelligence for the benefit of commerce and navigation..... \$7,862.10

Total..... 1,542,137.57

## INVESTIGATION AND RESEARCH.

Total expenditures as above..... \$58,112.60  
 Outstanding liabilities, Aug. 31 (estimated)... 1,427.30  
 Unexpended balance (estimated)..... 460.10

Total allotment..... 60,000.00

Distributed among the several subactivities as follows:

Improvement of instrumental equipment: Selecting, testing, improving, and designing instrumental apparatus for the scientific work of the bureau..... 1,512.60

Investigations of the problems of forecasting: Improving the accuracy of forecasts and formulating rules and enunciating principles in connection therewith..... 4,206.35

River and flood investigations: Improving methods of flood forecasting..... 3,527.62

Investigations in climatology: Determining more fully the climate of the entire United States, including the insular possessions.... 5,762.24

Aerological investigations: Studying upper-air conditions by means of kites and balloons for the purpose of fixing the general meteorological data in the whole atmospheric mass..... 13,897.72

Solar radiation investigations: Determining the insolation received in heat units on a horizontal surface from the sun and sky under all sky conditions; determining the radiation received on a normal surface in gram calories; establishing normals for insolation; investigating the relation between polarization and insolation on clear days; determining the effect of atmospheric conditions on nocturnal radiation; and measuring the insolation received through ray filters under different conditions.....	\$8,342.57	Investigations in agricultural meteorology: Studies of the effect of weather and climate upon the growth and yield of crops; investigating the protection of crops and orchards from frost.....	\$11,933.09
An empirical determination of the relative values of evaporation in the United States: Determining under standard conditions of exposure the relative values of evaporation in various portions of the United States and establishing the relation between the evaporation under the above standard conditions and the climatological factors that combine to bring it about.....	5,387.17	Ice-storm and sleet investigations: Improving and extending the issue of forecasts and warnings of the approach of ice storms and sleet, and collecting and publishing statistical data thereon showing distribution, frequency, and severity of ice storms, including details concerning the accompanying winds and other allied weather conditions, the thickness, weight, and damaging effects of ice coatings to vegetation, overhead-line construction, etc., so as to enable the Weather Bureau to meet the demands from telegraph and telephone companies, electric-power companies, horticulturists, students, etc., for information relating to such storms.....	283.72
Meteorological investigations: Determining the nature of meteorological phenomena and the laws of their actions.....	1,719.29	Total.....	59,539.90
Seismological investigations: Mapping the United States according to seismological activity and locating geological faults; studying in detail earthquake vibrations and drawing inferences therefrom in regard, on the one hand, to the scientifically important problem of the structure of the earth and, on the other, to the practical question of types of building best adapted to withstand seismic shocks.....	2,967.53	EDUCATIONAL WORK.	
		This work consists of the giving of instructions in meteorology by means of lectures and special courses, often according to definite schemes of cooperation between universities, colleges, and other educational institutions and the local representatives of the Weather Bureau. No expense on the part of the department is entailed, all necessary facilities being furnished by the educational institutions concerned.	

## Distribution of Weather Bureau work and expenditures by stations.

Station.	Nature of work. <sup>1</sup>	Amount.	Station.	Nature of work. <sup>1</sup>	Amount.
Abilene, Tex.....	a.....	\$2,090.89	Del Rio, Tex.....	a.....	\$1,369.11
Albany, N. Y.....	a, b.....	6,959.00	Denver, Colo. (district forecast and section center).	a, b, c, d, i.....	24,879.28
Alpena, Mich.....	a, b, e.....	4,101.99	Des Moines, Iowa (section center).	a, b, c, d, i.....	7,907.12
Amarillo, Tex.....	a.....	4,253.40	Detroit, Mich.....	a.....	12,359.76
Anniston, Ala.....	a.....	1,852.58	Devils Lake, N. Dak.....	a.....	1,966.34
Asheville, N. C.....	a.....	3,202.29	Dodge City, Kans.....	a.....	1,699.48
Atlanta, Ga. (section center).....	a, b, c, d.....	13,280.44	Drexel, Nebr.....	a, g.....	10,149.44
Atlantic City, N. J.....	a.....	2,979.70	Dubuque, Iowa.....	a, b.....	5,045.02
Augusta, Ga.....	a, b, c, d.....	6,473.63	Duluth, Minn.....	a.....	7,046.56
Baker, Oreg.....	a.....	1,598.00	Eastport, Me.....	a.....	2,270.01
Baltimore, Md. (section center).....	a, c, d, i.....	8,808.80	Elkins, W. Va.....	a.....	2,351.31
Bentonville, Ark.....	a.....	1,390.41	El Paso, Tex.....	a.....	3,119.10
Binghamton, N. Y.....	a.....	5,043.92	Erie, Pa.....	a.....	6,050.78
Birmingham, Ala.....	a.....	4,734.43	Escanaba, Mich.....	a.....	3,374.82
Bismarck, N. Dak. (section center).....	a, b, c, d.....	6,280.05	Eureka, Cal.....	a.....	2,204.25
Block Island, R. I.....	a, e.....	2,063.61	Evansville, Ind.....	a, b.....	5,712.26
Boise, Idaho (section center).....	a, c, d, i.....	6,581.71	Fort Smith, Ark.....	a, b.....	4,882.99
Boston, Mass. (section center).....	a, c, d, i.....	21,679.57	Fort Wayne, Ind.....	a.....	5,936.40
Buffalo, N. Y.....	a, i.....	13,931.88	Fort Worth, Tex.....	a.....	4,433.72
Burlington, Vt.....	a, i.....	4,413.17	Fresno, Cal.....	a, b.....	7,228.61
Cairo, Ill.....	a, b.....	4,580.11	Galveston, Tex.....	a.....	6,944.45
Canton, N. Y.....	a.....	2,378.98	Grand Haven, Mich.....	a.....	2,029.49
Cape Henry, Va.....	a, e, f.....	10,870.95	Grand Junction, Colo.....	a.....	1,339.61
Charles City, Iowa.....	a.....	1,660.04	Grand Rapids, Mich. (section center).....	a, b, c, d, i.....	8,973.20
Charleston, S. C.....	a, b, c, d.....	7,518.89	Green Bay, Wis.....	a.....	2,729.64
Charlotte, N. C.....	a.....	3,798.31	Hannibal, Mo.....	a, b.....	3,265.60
Chattanooga, Tenn.....	a, b.....	7,962.40	Harrisburg, Pa.....	a, b.....	4,677.40
Cheyenne, Wyo. (section center).....	a, c, d, i.....	6,567.31	Hartford, Conn.....	a, b.....	5,975.64
Chicago, Ill. (district forecast center).....	a, c, d, e.....	48,622.36	Hatteras, N. C.....	a, e.....	2,899.39
Cincinnati, Ohio.....	a, b.....	16,794.65	Havre, Mont.....	a.....	1,871.58
Cleveland, Ohio.....	a, i.....	11,943.97	Helena, Mont. (section center).....	a, c, d, i.....	9,984.58
Columbia, Mo. (section center).....	a, c, d, i.....	4,535.82	Honolulu, Hawaii (section center).....	a, c, d.....	6,833.70
Columbia, S. C. (section center).....	a, c, d, i.....	6,862.12	Houghton, Mich.....	a.....	3,546.33
Columbus, Ohio (section center).....	a, b, c, d, i.....	15,911.06	Houston, Tex. (section center).....	a, b, c, d.....	18,730.10
Concord, N. H.....	a, b.....	3,151.53	Huron, S. Dak. (section center).....	a, c, i.....	6,806.07
Concordia, Kans.....	a.....	1,389.95	Indianapolis, Ind. (section center).....	a, b, c, d.....	13,784.93
Corpus Christi, Tex.....	a.....	3,553.51	Iola, Kans.....	a, c.....	1,928.94
Dallas, Tex.....	a.....	5,618.23	Ithaca, N. Y. (section center).....	a, c, d, i.....	7,071.43
Davenport, Iowa.....	a, b.....	6,057.27	Jacksonville, Fla. (section center).....	a, c, d, i.....	15,291.35
Dayton, Ohio.....	a, b.....	6,412.70			

<sup>1</sup> The letters in this column have the following meaning: a, meteorological observations and reports and daily weather forecasts; b, river and flood work; c, climatological work; d, agricultural meteorological work; e, maintenance of seacoast telegraph line in connection with forecasts and warnings, and vessels reporting; f, vessel reporting; g, aerological investigations; h, solar-radiation investigations; i, educational work; k, general administration and supervision of work of the bureau.



*Distribution of Weather Bureau work and expenditures by stations—Continued.*

Station.	Nature of work.	Amount.	Station.	Nature of work.	Amount.
Kalispell, Mont.	a.	\$1,891.90	Reno, Nev. (section center)	a, c.	\$7,948.82
Kansas City, Mo.	a, b, c.	12,776.55	Richmond, Va. (section center)	a, b, c, d, i.	8,297.20
Keokuk, Iowa.	a, b.	2,037.89	Rochester, N. Y.	a.	4,539.18
Key West, Fla.	a, e, f.	7,900.46	Roseburg, Oreg.	a.	2,653.67
Knoxville, Tenn.	a, b.	5,585.57	Roswell, N. Mex.	a.	1,339.94
La Crosse, Wis.	a, b.	4,080.14	Sacramento, Cal.	a, b.	6,259.93
Lander, Wyo.	a.	1,427.18	Saginaw, Mich.	a, b, i.	4,088.33
Lansing, Mich.	a, i.	4,703.27	St. Joseph, Mo.	a.	5,426.61
Lewiston, Idaho.	a.	2,690.40	St. Louis, Mo.	a, b, c, d, i.	22,907.54
Lexington, Ky.	a.	3,932.75	St. Paul, Minn.	a.	3,833.08
Lincoln, Nebr. (section center)	a, c, d, h, i.	9,987.03	Salt Lake City, Utah (section center)	a, b, c, d, i.	12,522.51
Little Rock, Ark. (section center)	a, b, c, d, i.	10,990.80	San Antonio, Tex.	a.	5,574.00
Los Angeles, Cal.	a, i.	12,572.18	San Diego, Cal.	a.	8,124.51
Louisville, Ky. (section center)	a, b, c, d, i.	14,984.39	Sandusky, Ohio.	a.	5,398.24
Ludington, Mich.	a.	3,218.02	Sandy Hook, N. J.	a.	3,599.79
Lynchburg, Va.	a.	3,149.00	San Francisco, Cal. (district forecast and section center).	a, c, d, e, i.	31,805.41
Macon, Ga.	a, b.	4,298.49	San Jose, Cal.	a.	1,503.01
Madison, Wis.	a, h, i.	4,424.13	San Juan, P. R., W. I. (section center).	a, c.	3,925.05
Marquette, Mich.	a.	3,203.94	San Luis Obispo, Cal.	a.	1,830.58
Memphis, Tenn.	a, b, c.	7,965.15	Santa Fe, N. Mex. (section center)	a, c, d, h, i.	6,402.22
Meridian, Miss.	a, b.	4,440.20	Sault Ste. Marie, Mich.	a.	3,892.84
Miami, Fla.	a.	2,560.86	Savannah, Ga.	a, c.	8,198.79
Milwaukee, Wis. (section center)	a, c, d, i.	13,452.04	Scranton, Pa.	a.	4,908.34
Minneapolis, Minn. (section center)	a, b, c, d, i.	14,648.48	Seattle, Wash. (section center)	a, c, d, i.	15,829.83
Mobile, Ala.	a, b, c.	6,874.37	Sheridan, Wyo.	a, b.	2,501.38
Modena, Utah.	a.	1,824.55	Shreveport, La.	a, b.	4,754.12
Montgomery, Ala. (section center)	a, b, c.	7,566.92	Sioux City, Iowa.	a, b.	4,151.18
Mount Weather, Va.		1,610.76	Spokane, Wash.	a.	5,555.29
Nantucket, Mass.		2,211.72	Springfield, Ill. (section center)	a, c, d, i.	8,068.33
Narragansett Pier, R. I.	a, e.	1,487.89	Springfield, Mo.	a, i.	3,852.30
Nashville, Tenn. (section center)	a, b, c, d, i.	11,924.06	Syracuse, N. Y.	a, i.	4,885.88
New Haven, Conn.	a, i.	7,674.88	Tacoma, Wash.	a.	4,491.39
New Orleans, La. (district forecast and section center).	a, b, c, d, i.	27,931.18	Tampa, Fla.	a.	4,591.36
New York, N. Y.	a.	28,432.15	Tatoosh Island, Wash.	a, e, f.	3,746.54
Norfolk, Va.	a.	10,333.18	Taylor, Tex.	a.	3,215.26
Northfield, Vt.	a, i.	4,344.22	Terre Haute, Ind.	a, b.	6,624.24
North Head, Wash.	a, e.	2,077.12	Thomasville, Ga.	a.	2,262.47
North Platte, Nebr.	a.	3,076.39	Toledo, Ohio.	a.	5,902.05
Oklahoma, Okla. (section center)	a, c, d, i.	11,528.94	Tonopah, Nev.	a.	2,511.51
Omaha, Nebr.	a, b, c.	8,984.40	Topeka, Kans. (section center)	a, c, d, i.	5,680.50
Oswego, N. Y.	a.	2,134.77	Trenton, N. J. (section center)	a, c, d, i.	8,612.65
Palestine, Tex.	a.	2,599.66	Valentine, Nebr.	a.	1,852.64
Parkersburg, W. Va. (section center)	a, b, c.	5,230.08	Vicksburg, Miss. (section center)	a, b, c, d, i.	8,589.39
Pensacola, Fla.	a.	5,519.12	Wagon Wheel Gap, Colo.	a, c.	4,355.72
Peoria, Ill.	a, i.	5,106.43	Walla Walla, Wash.	a.	3,557.37
Philadelphia, Pa. (section center)	a, b, c, d, i.	16,934.80	Washington, D. C. (central office of the bureau and district forecast center).	a, b, c, d, e, f, g, h, i, k.	336,003.38
Phoenix, Ariz. (section center)	a, b, c, d, i.	8,631.29	Wausau, Wis.	a, b.	1,966.77
Pierre, S. Dak.	a.	1,514.64	Wichita, Kans.	a, b.	4,993.59
Pittsburgh, Pa.	a, b.	15,169.34	Williston, N. Dak.	a.	1,758.56
Pocatello, Idaho.	a.	1,854.11	Wilmington, N. C.	a, c.	4,287.64
Port Angeles, Wash.	a, e, f.	11,072.18	Winnemucca, Nev.	a.	1,875.42
Port Huron, Mich.	a.	3,260.74	Wytheville, Va.	a.	1,815.71
Portland, Me.	a, b.	6,246.82	Yankton, S. Dak.	a.	1,440.18
Portland, Oreg. (district forecast and section center).	a, b, c, d, i.	26,950.93	Yellowstone Park, Wyo.	a.	2,634.99
Providence, R. I.	a.	6,445.34	Yuma, Ariz.	a, c.	1,386.84
Pueblo, Colo.	a.	3,332.74	Alaskan stations.	a, c.	1,967.49
Raleigh, N. C. (section center)	a, b, c, d.	13,436.34	West Indian and Caribbean Sea stations.	a, c.	22,104.60
Rapid City, S. Dak.	a.	1,867.29	Stores in stock.		13,158.76
Reading, Pa.	a.	4,481.41			
Red Bluff, Cal.	a.	2,524.92			
			Total, Weather Bureau.		1,657,340.77

## BUREAU OF ANIMAL INDUSTRY.

*Classification of expenditures for the fiscal year ended June 30, 1916.*

	Project.	Salaries.				Travel, station, and field expenses.	Equipment.		
		Statutory.	Lump fund.		Total.		Apparatus, instruments, laboratory.	Furniture.	Miscella- neous.
			In Wash- ington.	Out of Washington.					
1	Administration.....	\$95,993.54	\$25,133.72		\$121,127.26	\$3,379.15	\$1,099.43	\$934.68	\$1,104.41
2	Eradication and control of animal diseases.	23,350.66	39,352.31	\$335,312.64	398,015.61	87,349.63	4,110.87	598.97	614.92
3	Inspection and quarantine of imported animals and export live-stock inspection.	6,418.51	4,722.97	65,605.95	76,747.43	11,314.00	46.44	112.45	89.10
4	Eradication of cattle ticks.....	12,202.45	6,333.66	273,185.74	291,721.85	106,461.82	1,442.59	465.11	1,230.58
5	Live-stock demonstration work in areas freed from cattle ticks.			29,213.98	29,213.98	16,405.76			
6	Dairy investigations.....	22,751.64	92,747.11	91,219.87	206,718.62	35,679.05	2,950.16	167.23	2,674.78
7	Animal husbandry investiga- tions.	17,950.59	35,267.35	85,022.78	138,240.72	12,024.32	1,196.35	397.17	4,001.15
8	Investigations of animal dis- eases.	31,252.48	37,595.55	24,954.14	93,802.17	3,740.32	2,347.07	355.43	1,579.27
9	Construction of buildings at Bethesda and Beltsville, Md.	1,720.00		2,041.84	3,761.84		46.30		
10	Investigation, treatment, and eradication of hog cholera.	5,532.75	11,099.11	107,438.16	124,070.02	23,638.79	3,002.69	103.15	627.50
11	Control of the manufacture, importation, and shipment of viruses, serums, etc.	501.40	5,922.26	87,041.56	93,465.22	11,820.93	1,078.46	299.38	323.54
12	Eradication of dourine.....	1,310.00	2,327.05	19,436.25	23,073.30	19,284.78	184.59		9.25
13	Control of meat and meat food products.	118,435.32	46,297.17	3,177,142.29	3,341,874.78	49,714.44	8,555.83	1,649.52	839.35
14	Eradication of foot-and-mouth disease.	2,488.61	1,781.57	166,512.26	170,782.44	106,727.39	50.58	9.25	2,571.64
15	Live-stock production in cane- sugar and cotton districts.			32,333.54	32,333.54	6,349.20	179.39	144.87	1,459.12
	Total.....	339,907.95	308,579.83	4,496,461.00	5,144,948.78	493,889.58	26,290.75	5,237.21	17,124.61

## PROJECT STATEMENTS.

## ADMINISTRATION.

Total expenditures as above.....	\$133,113.48
Outstanding liabilities, Aug. 31 (estimated)	699.45
Unexpended balance (estimated).....	8,268.59

Total allotment..... 142,081.52

Supervision of the bureau activities and the performance of such duties as are common to the bureau as a whole, the cost of which can not be readily prorated against the various projects involved, such as accounting and editorial work, the distribution of supplies, and matters relating to the personnel.....	133,812.93
--	------------

## ERADICATION AND CONTROL OF ANIMAL DISEASES.

Total expenditures as above.....	\$503,659.02
Outstanding liabilities, Aug. 31 (estimated).	4,637.13
Unexpended balance (estimated).....	2,172.21

Total allotment..... 510,468.36

Distributed among the several subactivities as follows:

Supervision: General direction of all work connected with the eradication and control of animal diseases and prevention of the interstate spread of these diseases; performance of duties connected with the general work of eradication, including correspondence with the public and conferences with other branches of the Government service.....	16,104.82
Eradication of scabies in sheep: Cooperation with States in which scabies in sheep	

exists by providing quarantine measures to prevent the spread of this disease and by demonstrating proper treatment, including the cleaning and disinfection of cars, pens, and other premises, thereby fostering the industry and encouraging greater production of mutton and wool.. \$156,359.23

Eradication of mange (scabies) in cattle and horses: The object of this work and the methods employed are similar to those followed in the project on sheep scabies.. 91,716.65

Supervision of interstate transportation of live stock and inspection of southern cattle outside the quarantine area: Examination and inspection of all live stock unloaded at market centers and public stockyards where Federal inspection is maintained, to determine the presence in any of the animals of diseases which might be communicated to animals in other States; also issuance of certificates covering interstate movement of animals free from disease or which have been treated under bureau supervision..... 153,714.14

Enforcement of the 28-hour law: Enforcement of the law requiring that animals being shipped interstate are unloaded for feeding, resting, and watering at least once in 28 hours, and that the animals are handled in a humane manner at stockyards where such unloading is performed. 13,173.15

Inspection relative to existence of contagious diseases: Investigation of alleged violations of the live-stock quarantine regulations; supervision of the inoculation of swine against hog cholera for interstate



## BUREAU OF ANIMAL INDUSTRY.

Classification of expenditures for the fiscal year ended June 30, 1916.

Stationery.	Rent.	Telegraph, telephone, and postage.	Freight, express, and drayage.	Furnishing of heat, light, power, electricity.	Forage purchased in bulk.	Fuel.	Specified items not otherwise classified.	Miscellaneous supplies, services, etc.	Total.	
\$3,552.90		\$410.48	\$109.04				\$500.28	\$895.85	\$133,113.48	1
513.25	\$3,262.05	928.98	1,142.14		\$143.68		102.40	6,876.52	503,659.02	2
	787.00	558.59	5.36	\$23.25	274.95	\$1,034.33	220.53	507.60	91,721.03	3
651.63	2,695.50	717.37	1,893.58	19.06			446.94	3,195.27	410,941.30	4
		27.45						1.60	45,648.79	5
636.49	235.00	504.10	386.87	899.54	2,775.29	581.44	3,728.90	3,104.68	261,042.15	6
288.46	1,653.09	464.73	1,194.89	1,217.50	16,317.77	268.72	12,361.80	12,512.15	202,138.82	7
81.46	660.00	169.21	661.30	275.61	11,554.47	971.77	2,047.25	3,433.70	121,679.03	8
			138.02				4,173.51	183.61	8,303.28	9
49.65	499.99	534.12	1,117.96	279.13	7,096.37	79.78	9,546.12	12,615.62	183,260.89	10
14.13	433.80	373.63	1,140.00					1,769.42	110,718.51	11
2.88	40.00	9.72	39.84		3,163.03		15,428.09	573.60	61,809.08	12
4,860.15	25,342.46	5,431.72	3,243.17	221.10	63.90		520.51	7,600.93	3,449,917.86	13
37.55	319.14	1,601.53	369.02	6.10	460.00		294,521.50	53,702.44	631,158.58	14
145.82	51.00	145.63	564.13		2,421.75	51.64	11,775.15	3,961.37	59,582.61	15
10,834.37	35,979.03	11,877.26	12,005.32	2,941.29	44,271.21	2,987.68	1,355,372.98	110,934.36	6,274,694.43	

<sup>1</sup> Subsistence and care of animals and storage and care of vehicles, \$11,313.68; mechanics', engineers', and electricians' supplies, \$4,897.90; cleaning and toilet supplies, \$906.86; structures and parts and nonstructural improvements to land, \$24,780.20; purchase of animals for experimental and control purposes, \$313,474.34.

movement from public stockyards; control of animal diseases in Porto Rico; and control of glanders and scabies in horse stock in the District of Columbia.....	\$100.64
Inspection and tuberculin testing of cattle and mallein testing of horses: Inspection and tests to prevent the spread of tuberculosis of cattle and of glanders in horses and mules through interstate movement; to prevent the spread of tuberculosis in dairy herds, and to provide milk supplies from cattle free from tuberculosis; to prevent the spread of tuberculosis among pure-bred breeding cattle, and to establish a public registry of pure-bred herds which have been shown to be free from tuberculosis, in order that breeders throughout the country may have assurances of the healthfulness of pure-bred cattle which they are purchasing for the improvement of their herds.....	52,958.84
Preparation and distribution of tuberculin, mallein, and blackleg vaccine: Manufacture in the bureau laboratories of supplies of tuberculin and mallein for the testing of animals, and of blackleg vaccine for the prevention of blackleg in cattle, and distribution of these vaccines.	20,389.54
Investigation and chemical testing of dips and disinfectants: Chemical and bacteriological studies of dips and disinfectants and of methods of preparing them, so as to insure the employment of properly compounded preparations in official dipping and disinfecting operations.....	3,779.14
Total.....	508,296.15

## INSPECTION AND QUARANTINE OF IMPORTED ANIMALS, AND EXPORT LIVE-STOCK INSPECTION.

Total expenditures as above.....	\$91,721.03
Outstanding liabilities, Aug. 31 (estimated)	1,545.71
Unexpended balance (estimated).....	709.07

Total allotment..... 93,975.81

Distributed among the several sub-activities as follows:

Supervision: General direction of the work of inspection and quarantine of imported animals and of export live-stock inspection and the performance of duties common to the whole work.....	5,096.74
Inspection of animals for importation: Inspection at ports of entry and the establishment of quarantines, when necessary, with a view to prohibit the importation of diseased animals.....	63,115.34
Quarantine of animals at ports of entry: Maintenance of quarantine stations for the detention, observation, and test of imported animals, with the object of preventing the introduction of animal diseases.....	11,089.66
Supervision over importations of hay, forage, hides, hair, wool, and other animal by-products, etc., to prevent the introduction of animal diseases.....	3,877.89
Inspection and testing of animals for export to foreign countries, to insure freedom of export animals from disease.....	4,953.26
Inspection of vessels carrying export animals, to provide for the safe transportation and humane treatment of export live stock.....	3,290.41

Investigation of methods of disinfecting hides: Determination of the best methods for the disinfection of hides, in order to prevent the introduction of infectious material..... \$1,843.44

Total..... 93,266.74

#### ERADICATION OF CATTLE TICKS.

Total expenditures as above..... \$410,941.30

Outstanding liabilities, Aug. 31 (estimated) 2,398.88

Unexpended balance (estimated)..... 6,899.28

Total allotment..... 420,239.46

Extermination of the ticks which spread the infection of splenic fever of cattle, in cooperation with live-stock sanitary organizations in the States concerned... 413,340.18

#### LIVE-STOCK DEMONSTRATION WORK IN AREAS FREED FROM CATTLE TICKS.

Total expenditures as above..... \$45,648.79

Unexpended balance (estimated)..... 4,351.21

Total allotment..... 50,000.00

Cooperation with county agents and with State officials in demonstrating to farmers the best means within their reach to improve and develop the live-stock industry and dairying in the areas freed from cattle ticks in the Southern States..... 45,648.79

#### DAIRY INVESTIGATIONS.

Total expenditures as above..... \$261,042.15

Outstanding liabilities, Aug. 31 (estimated) 8,160.57

Unexpended balance (estimated)..... 7,188.92

Total allotment..... 276,391.64

Distributed among the several sub-activities as follows:

##### *Administration.*

Administration: General direction of the Dairy Division work, including branch library, files, requisitions and accounts, dairy engineering, compilation and indexing, editorial and stenographic work, and stores..... 34,843.81

##### *Dairy Farming.*

Supervision: General supervision and office correspondence and record work; compilation of material for use in field work and preparation of manuscripts..... 11,669.49

Southern dairying: The object of this work is to encourage the development of the dairy business by instruction and demonstration..... 16,345.49

Dairy demonstration farm: Operation of a dairy farm at Denison, Tex., for the purpose of demonstrating the practicability of reclaiming a worn-out cotton farm by dairying..... 1,620.00

Cow-testing associations and cooperation with county agents in dairy work: Advice and assistance in the organization of cow-testing associations, with the object of increasing economically the average milk and butter production of the dairy cows in the United States and assisting county agents with general dairy work, such as silo and dairy building construction, feed-

ing, care, and management of dairy cattle, special assistance at fairs, etc..... \$5,069.02

Community development in dairying: Determination of the practicability of the small community raising its economic status through the employment of a field instructor skilled in dairying..... 2,120.37

Investigations in cow-testing and bull associations: Determination of the best forms of cooperation for the development and increase in production of the dairy herds of the United States, and organization for the development of bull associations..... 21,622.59

Holstein cattle breeding: Investigation in the production of cattle of this type suitable for conditions in the semiarid portions of the West ..... 800.00

##### *Dairy Manufacturing.*

Supervision: General direction of all work in dairy manufacturing, including extension work carried on with creameries by correspondence; compilation of information collected..... 7,593.02

Creamery extension: Advice and assistance to creamery operators and patrons looking to the improvement of the quality of milk and cream delivered to creameries, the quality of the product, and the general efficiency of creameries..... 25,430.72

Cheese factory extension: Extension work in representative dairy sections to encourage the building of cheese factories in localities where the industry will prove successful, to improve the quality of milk delivered to cheese factories, to improve the methods of making and hence the quality of cheese, and to increase the general efficiency of cheese factories and their management..... 2,132.03

Farm butter making: Instruction to dairy farmers in Tennessee, Alabama, North Carolina, South Carolina, and Georgia in the art of butter making, with a view to improve the quality of the dairy butter produced; general advice and assistance in the interest of dairy development in that territory..... 1,962.70

Renovated-butter inspection: Inspection of renovated butter, the materials used in its manufacture, and the factories producing this product, as required by the act of May 9, 1902..... 7,118.12

Butter inspection for Navy Department: Daily inspection at plants manufacturing butter for the Navy Department to see whether the product complies with the specifications and thus to assist the department in securing first-class tinned and tub creamery butter and incidentally study the manufacture of butter for storage..... 223.75

##### *Dairy Research Laboratories.*

Supervision: General direction and office work of the laboratories..... 5,104.36

Investigations of the manufacture and handling of commercial ice cream, to determine methods and conditions necessary for the practical, economical, and sanitary manufacture of this product.... 2,656.49

Changes in butter: Experiments to determine the factors which control the flavor, both desirable and undesirable, of butter, including studies of the methods of hand-



ling cream, pasteurization, ripening of cream, changes of butter in storage, and methods of renovating.....	\$10,342.76	cluding the cost of various operations in preparing milk for the market, with a view to avoid uneconomical methods and suggest ways of lessening the cost of handling.....	\$2,293.79
Milk-condensing investigations: Investigations to secure a general knowledge of milk condensing, determine causes of spoilage, and develop logical methods of operation.....	3,129.92	Cost of milk production: Determination of the actual cost of milk production on the average dairy farm; including an investigation of the increased cost attributable to modern sanitary methods and the variation in cost of milk production in different sections.....	3,987.51
Bacteriology of milk: Biological studies of the bacteria occurring in milk, their relation to one another and to similar groups occurring elsewhere, their physiology and action on the constituents of milk, their habitat and the means by which they get into milk, methods of preventing contamination, and means of destroying bacteria in milk.....	9,098.40	Dairy sanitation extension: Educational work among dairymen and milk handlers with the object of unifying and making more efficient inspections carried on by State and municipal boards of health..	6,960.29
Physiology of milk secretion: Investigation of the mechanism of milk secretion and of the factors which control or influence this function, with a view to a more logical breeding and feeding of dairy cows..	4,872.26	<i>Dairy Division Experiment Farm.</i>	
Utilization of creamery and cheese-factory by-products: Study of methods for the utilization of by-products of creameries and cheese factories by converting them into products which will be useful in the arts or available as food for man or animals.....	590.85	Supervision: General direction of all work in dairying at the dairy experiment station.....	5,601.50
Disposal of dairy, creamery, and cheese-factory wastes: Investigation of methods for the proper disposal of the wastes of dairy farms, creameries, and cheese factories.....	500.00	Breeding of dairy cattle: Study of the breeding of dairy cattle, and application of principles thus established.....	4,865.50
Manufacture and ripening of Swiss cheese: Studies of the factors producing the peculiar chemical and physical changes which give Swiss cheese its desirable character, and the application of this knowledge to practice.....	5,731.00	Feeding of dairy cattle: Study of the effects of the various feed and constituents of feeds upon the animal body, upon growth, and upon the yield and composition of milk, and of the relative values of feeds for dairy production....	4,635.50
Soft-cheese investigations: Investigation of the manufacture and ripening of certain European varieties of soft cheese, including a detailed study of the microorganisms active in their production; also the chemical determination of standards of composition with the complex changes involved in the ripening processes as applied to American milk and to the different climatic conditions encountered.....	6,230.44	Housing and care of dairy cattle: Determination of the best method of stabling cows; and investigations of problems in the milking and care of cows and their management.....	3,910.50
Cheddar-cheese investigations: Study of methods of securing a more uniform product, the extent of losses and means of prevention, and bacteriological and chemical factors involved in the development of desirable and undesirable flavors.....	300.00	Feed production: The production of feed for the dairy herd at the Beltsville farm; detailed records being kept of the cost of all farm operations and observations made on the building up of the soil by fertilization, tillage, and drainage.....	8,411.08
Silage investigations: Study of the changes which take place in the material put into the silo.....	2,330.00	Silage investigations: Determination of advantages and disadvantages of the various materials used in building and preserving silos, the stage of maturity at which the corn plant should be siloed, and other silage problems.....	1,225.75
Chemical investigations of feed for dairy cattle: Chemical work in connection with the feeding experiments conducted at Beltsville, Md.....	2,385.00	Metabolism in dairy cows: Determination of the total energy of the feed consumed by milking animals, the losses of energy in the excreta, the expenditure of energy consequent upon the consumption of the feed and, by difference, the net energy of the feed; and investigation of the distribution of this net energy of the feed between the two possible forms of production, viz, fattening or milk secretion, and the effect upon it of the quantity and quality of the feed, as well as of other factors.....	3,500.00
<i>Milk Investigations and Demonstration.</i>		<i>Western Dairy Extension.</i>	
Supervision: General direction of the work of the section, answering correspondence, etc.....	2,883.33	Supervision: General direction of western dairy extension work, including correspondence and other clerical routine....	4,198.03
Dairy sanitation investigations: Investigation of the sanitation of city milk supplies, factors influencing the commercial quality of milk, and means of producing and handling milk of a superior quality.....	2,903.62	Dairy farming: Instructions to farmers in the Western States in the feeding of dairy cattle, the raising of calves, construction of silos and dairy buildings, herd-record work, and the selection of pure-bred bulls, with the object of improving and developing the business of dairying in that section.....	15,493.06
Cost of handling milk: Determination of the cost of handling milk in cities, in-		Milk work: Educational work among dairymen and milk handlers, with a view to improve the milk supply and to unify	



and make more efficient inspections carried on by State and municipal boards of health.....	\$2,791.94	its from the practical management of farm flocks in New England.....	\$743.91
Dairy manufacturing: Advice and assistance to creamery and cheese-factory operators and patrons for the purpose of introducing better methods and securing a uniformly good product.....	3,718.73	Production of pork: Studies of the effect of feed on the growth and quality of hogs and the keeping quality of pork, the effect of feed on the physiological condition of hogs, the toxic effect of cottonseed meal feeding, and the methods of farm curing of pork.....	15,609.56
Total.....	269,202.72	Organization of pig clubs: The object of this work is to stimulate an interest in swine production; to teach farm children improved methods of raising, fattening, and marketing hogs; to instill in them, while young, a love of animals which will result in their taking more interest in life upon the farm; and to furnish them at the same time with some work which will, in a practical way, give an insight into the business side of farm life.....	22,928.29
ANIMAL HUSBANDRY INVESTIGATIONS.		Farm horse and mule investigations: Study of problems in feeding, breeding, and management of horses and mules, with particular reference to their use as farm work animals.....	3,799.71
Total expenditures as above.....	\$202,138.82	Breeding American carriage horses: Investigations in the production of a breed of horses from American material suitable for carriage and general purposes.....	6,025.89
Outstanding liabilities, Aug. 31 (estimated)	2,441.12	Breeding Morgan horses: The object of this project is to breed horses under New England conditions, establishing a stud and using horses of Morgan descent as the foundation; and, incidentally, to preserve the Morgan type and blood lines...	15,190.74
Unexpended balance (estimated).....	2,430.65	Breeding horses on Indian reservations: Improvement of the quality of horses bred on Indian reservations by proper selection and the use of pure-bred stallions.....	989.08
Total allotment.....	207,010.59	Breeding horses for military purposes: The breeding of horses suitable for military purposes in localities where such horses are the most profitable type for farm use, and the encouragement, in general, of better horse-breeding methods among farmers.....	27,072.83
Distributed among the several sub-activities as follows:		Farm poultry investigations: Study of the effect of rations, the inheritance of egg production, and other characteristics, the incubation of eggs, brooding, and the effect on health of fowls and on fertility of eggs of free range, small and large yards, and various styles of houses.....	20,324.92
Supervision: General direction of the work in the Animal Husbandry Division, such office expenses as are not chargeable to specific projects coming under this head.....	12,683.28	Ostrich investigations: Investigation of the problems underlying the breeding, incubation, and feeding of ostriches in the United States; cooperation with the pathological division of the bureau in studying the diseases and climatic conditions affecting them; study of the marketing of feathers; and assistance to ostrich breeders in the preparation of their product for market.....	1,853.08
Genetic research: Investigations of the effects of animal inbreeding from a scientific standpoint; interpretation of these results with regard to advantages and disadvantages in practical breeding, with suggestions as to the mode of procedure to secure the former without suffering from the latter; study of the mode of inheritance of special traits; and, in general, investigations of the factors which determine the course of the life histories of animals.....	3,960.11	Organization of poultry clubs: The object of this work is to stimulate an interest in poultry among farm boys and girls; to give a better knowledge of the value and importance of the poultry industry; to encourage better poultry management and the breeding of standard-bred poultry; to standardize poultry and poultry products; and to show how increased revenue may be obtained by marketing a first-class uniform product.....	11,388.18
Animal husbandry experiment farm: Maintenance of a farm at Beltsville, Md., for the purpose of affording the bureau proper facilities for conducting investigations in the feeding and breeding of farm animals, including poultry.....	22,724.31	Total.....	204,579.94
Beef production: Study of the cost of maintaining breeding herds and the cost of producing beef animals to various ages; study of methods of fattening cattle and the relative importance of various feed-stuffs for such purposes, including work with calves, baby beefs, and steers; investigation of methods of wintering stocker and feeder cattle; and determination of the effect of beef-cattle raising on soil fertility.....	15,546.89		
Certification of animals imported for breeding purposes: Determination of the purity of breeds and the identity of horses, dogs, and cats imported for breeding purposes under the provisions of paragraph 397 of the tariff act of Oct. 3, 1913.....	2,195.60		
Range-sheep investigations: Investigations of the production of a range type of sheep from stock of Rambouillet blood; the adaptability of Corriedale sheep to western range conditions; study of flock management; and problems in range-sheep breeding.....	21,543.56		
Farm-sheep investigations: Study of the factors controlling yields of lambs and the rate of their growth; determination for the main types of agricultural conditions in the farm States and for irrigated and dry-land farming areas of the lines upon which sheep raising can be made most profitable; and dissemination of data as to the prof-			



## INVESTIGATIONS OF ANIMAL DISEASES.

Total expenditure as above.....	\$121, 679. 03
Outstanding liabilities, Aug. 31 (estimated).....	1, 040. 86
Unexpended balance (estimated).....	3, 251. 15

Total allotment.....	125, 971. 04
----------------------	--------------

Distributed among the several subactivities as follows:

Supervision: General direction of all the investigations of animal diseases and the performance of duties common to this work.....	12, 301. 19
--	-------------

Rabies investigations: The diagnosis of rabies in animals; study of the disease to find the causative agent and to be able to grow this agent by laboratory methods; determination of the significance of Negri bodies in relation to the causation of rabies.....	1, 451. 95
--	------------

Dourine and glanders: Studies to determine the presence or absence of dourine in suspected animals, to establish the extent of glanders infections among horses and mules of the country, and to devise a method of vaccination that will protect animals from infection with glanders.....	5, 427. 89
---	------------

Forage poisoning or cerebrospinal meningitis of horses: Studies having in view the determination of the causative agent of this disease and the devising of measures for its prevention; also detection and study of the lesions of this disease..	1, 134. 67
--	------------

Animal tuberculosis: Investigations in the control and eradication of tuberculosis among cattle, hogs, and other domestic animals, including studies of the mode of infection with tubercle bacilli, the manner in which the disease is disseminated, methods of treatment, and measures necessary to prevent its transmission.....	7, 461. 59
---	------------

Animal abortion: Study of the etiology, mode of transmission, and practicable means of eradicating the disease; devising the most satisfactory method of disinfecting contaminated premises; and determination of the presence of the bacillus in suspected samples of market milk, as well as in hairless pigs and in goats and calves affected with goiter....	6, 841. 80
--	------------

Swamp fever: Determination of the nature, cause, and prevention of the so-called swamp fever of horses, and development of an accurate method of laboratory and clinical diagnosis; involves a general study of the so-called filterable or ultraviable viruses and new methods of procedure in diagnostic technique.....	2, 920. 71
---	------------

Malta fever: Determination of the extent of this disease among goats in the United States and methods of diagnosis by the agglutination and complement-fixation test; immunizing experiments with vaccines prepared from <i>Micrococcus melitensis</i> .....	100. 00
--	---------

Diagnosis of and immunization against anthrax: Experiments having in view the differentiation between anthrax and other diseases which bear resemblance to it and the perfecting of means of immunization against the disease by vaccination.....	1, 194. 61
---	------------

Dry immune serums: Devising means by which an immune serum may be dried and prepared in powdered form without losing any of its potency and without being subjected to the dangers of con-

tamination; the purpose of the drying being to increase the keeping quality of the serum and reduce the bulk of the injections and the cost of the product.....

	\$200. 00
--	-----------

Diseases of fowls: Investigations of the causes of serious fowl diseases and of methods of control.....	2, 444. 84
---	------------

Miscellaneous biological experiments and investigations: Development of methods for the control of hemorrhagic septicemia; determination of the specific nature of diseases affecting animals at the National Zoological Park for the purpose of controlling these diseases; investigations of market milk as it reaches the city after shipment from dairies in the country, for the detection of pathological conditions; and miscellaneous investigations of animal diseases as required from time to time.....	5, 375. 61
--	------------

Index catalogue and collection of parasites: Maintenance of a comprehensive card index to the literature of animal parasites and a collection of specimens of parasites for study and reference.....	1, 623. 01
--	------------

Roundworms in sheep: Development of methods for the control and eradication of these parasites.....	10, 441. 80
---	-------------

Parasitic protozoa: Studies of the character and life history of these parasites, with particular reference to blackhead in turkeys, with a view to their eradication and control.....	2, 444. 64
--	------------

Cattle ticks, mange mites, and other external parasites: Investigations to develop the most effective methods for the eradication and control of external parasites of animals.....	10, 321. 10
---	-------------

Miscellaneous investigations of animal parasites: Investigations to develop methods for the control and eradication of miscellaneous animal parasites.....	3, 974. 73
--	------------

General maintenance of Bethesda experiment station: This represents overhead charges incidental to the maintenance and upkeep of the buildings, fences, and equipment of the bureau experiment station at Bethesda, Md., together with the cost of planting and harvesting crops and other operations in connection with running the farm, which items can not be segregated and charged against specific investigational projects.....	28, 915. 99
---	-------------

Breeding and feeding small experiment animals for disease research: The object of this work is to breed and have available an abundant supply of small experiment animals of definite known history for the various investigations conducted by the several laboratories of the Bureau of Animal Industry.....	9, 050. 13
--	------------

Stock poisoning by plants: Investigation of the losses of stock from poisonous plants and development of methods for avoiding such losses.....	9, 093. 63
--	------------

Total.....	122, 719. 89
------------	--------------

## CONSTRUCTION OF BUILDINGS AT BETHESDA AND BELTSVILLE.

Total expenditures as above.....	\$8, 303. 28
Outstanding liabilities, Aug. 31 (estimated).....	470. 29
Unexpended balance (estimated).....	146. 43

Total allotment.....	8, 920. 00
----------------------	------------

The construction of barns, sheds, and other buildings required for the proper conduct of the animal-disease, animal-husbandry, and dairy-research work.....	8, 773. 57
---	------------



## INVESTIGATION, TREATMENT, AND ERADICATION OF HOG CHOLERA.

Total expenditures as above.....	\$183, 260. 89
Outstanding liabilities, Aug. 31 (estimated).....	5, 161. 30
Unexpended balance (estimated).....	48, 710. 56

Total allotment.....	237, 132. 75
----------------------	--------------

Distributed among the several subactivities as follows:

Supervision: Direction and coordination of all research, extension, and control work relating to the cause and prevention of hog cholera.....	4, 942. 03
Hog-cholera control: The control of this disease looking to its eradication, and the production of serum used in the organization of the work.....	152, 934. 23
Educational and demonstrational hog-cholera work: Instructions to farmers, through county agricultural agents and others, in methods of controlling hog cholera by the application of the preventive serum treatment and proper quarantine and sanitary measures.....	27, 251. 22
Investigation of the cause and methods of producing immunity against hog cholera: Investigations to improve and cheapen present methods of immunizing hogs against hog cholera; and to determine and, if possible, cultivate artificially the specific microorganism of hog cholera....	3, 294. 71
Total.....	188, 422. 19

## CONTROL OF THE MANUFACTURE, IMPORTATION, AND SHIPMENT OF VIRUSES, SERUMS, ETC.

Total expenditures as above.....	\$110, 718. 51
Outstanding liabilities, Aug. 31 (estimated).....	2, 567. 25
Unexpended balance (estimated).....	615. 64

Total allotment.....	113, 901. 40
----------------------	--------------

Distributed among the several subactivities as follows:

Supervision: General direction of the work of enforcing the law governing the interstate shipment and the importation of viruses, serums, toxins, and analogous products intended for use in the treatment of domestic animals, including the supervision of the work of 71 employees at the various localities in the United States where such products are prepared, and the performance of duties common to the whole work.....	3, 388. 34
Special supervisory inspection: Personal investigations of licensed establishments and of the conduct and inspection of operations at licensed establishments to see that the law, regulations, and instructions governing the preparation, sale, barter, exchange, shipment, and importation of viruses, serums, toxins, and analogous products intended for use in the treatment of domestic animals are properly observed.....	108, 965. 54
Inspection of establishments: Inspection and supervision of the operations of establishments engaged in the preparation and disposal of serums, viruses, vaccines, toxins, etc., to determine whether or not licenses should be issued; also to determine whether the products of licensed establishments are pure and potent.....	931. 88
Total.....	113, 285. 76

## ERADICATION OF DOURINE.

Total expenditures as above.....	\$61, 809. 08
Outstanding liabilities, Aug. 31 (estimated).....	255. 78
Unexpended balance (estimated).....	2, 418. 69

Total allotment.....	64, 483. 55
----------------------	-------------

Inspection of all horses in areas where dourine is known to exist and removal of stallions in such areas from the open range; the securing of blood serum from each animal and its subsequent examination in the bureau laboratory at Washington; slaughter of all mares reacting to the test and slaughter or castration of all reacting stallions.....

62, 064. 86

## CONTROL OF MEAT AND MEAT FOOD PRODUCTS.

Total expenditures as above.....	\$3, 449, 917. 86
Outstanding liabilities, Aug. 31 (estimated).....	10, 838. 40
Unexpended balance (estimated).....	21, 671. 20

Total allotment.....	3, 482, 427. 46
----------------------	-----------------

Distributed among the several subactivities as follows:

Supervision: General direction of the work of meat inspection, including the supervision of some 2,500 employees at all the slaughtering centers of the United States, and the performance of duties common to the whole work.....	85, 931. 08
Purchase, preparation, and distribution of brands and branding ink: Provision for suitable fluid and branding appliances for marking carcasses, parts of carcasses, and meat and meat food products inspected under the meat-inspection act.....	3, 943. 36
Special supervisory inspection: Personal investigations of official establishments and of the conduct and inspection of operations to see that the law, regulations, and instructions governing meat inspection are properly observed.....	18, 248. 23
Laboratory inspection: Chemical and bacteriological examinations to ascertain whether meat and meat food products prepared in official establishments or under exemption or those shipped interstate by farmers, as well as imported meats and meat food products, are properly labeled, sound, healthful, wholesome, and otherwise fit for human food, and to determine whether any prohibited substance has been used in their preparation or in and about the establishment; also examinations to determine whether the water and ice used in the preparation of meat and meat food products are potable.....	66, 494. 47
Ante-mortem inspection of animals for slaughter: Examination of all cattle, sheep, swine, and goats to discover animals which show symptoms of or are suspected of being affected with any disease or condition which would probably cause their condemnation in whole or in part when slaughtered, such animals being held apart and slaughtered separately from other animals so as to insure careful post-mortem inspection as provided in the regulations governing Federal meat inspection.....	194, 943. 51
Post-mortem inspection of animals: Visual and digital examination and inspection of the carcasses and parts of all cattle, sheep, swine, and goats slaughtered at	

official establishments to determine the presence in any such carcasses or parts of any lesions of disease or other condition which might render the meat or any organ unfit for food purposes; and condemnation and destruction for food purposes of all carcasses or parts thereof of animals found on final inspection to be unsound, unhealthful, unwholesome, or otherwise unfit for human food.....	\$1, 267, 577. 81	are not properly certified, or which are falsely labeled, or which are unsound, unhealthful, unwholesome, or otherwise unfit for human food, or which contain any prohibited dye, chemical, preservative, or other harmful ingredient.....	\$11, 748. 16
Supervision of the preparation and distribution of meats: Inspection of meat and meat food products prepared within and brought into official establishments and departments thereof to see that no unfit meat or product is used in the various processes of preparation, packing, salting, smoking, canning, etc., to insure proper labeling, and to see that establishments are maintained in a sanitary condition, that the workers are clean as to person and raiment, and that deleterious preservatives or ingredients are not used.....	1, 435, 151. 74	Field overhead and miscellaneous meat inspection: This includes the overhead charges, such as details of inspectors in charge, supervisors, clerks, etc., at the meat-inspection stations throughout the United States; also minor activities not included under other projects of this group.....	334, 759. 85
Inspection of meats for the United States Navy: Supervision of the preparation of meat and meat food products for the Navy to insure that they are sound and fit for food purposes at the time of delivery and that such articles conform to the specifications of the Navy.....	8, 370. 86	Bacteriological investigations of meat and meat food products: The object of these investigations is to aid inspectors to determine the proper disposition of questionable meat and to enable packers, by the use of proper methods, to prevent spoilage.....	2, 223. 54
Inspection at public markets: Examinations at public markets of portions of inspected and passed meats and products thereof which, when cut or otherwise removed from a marked carcass, part, or container, do not show the inspection legend.....	12, 509. 09	Investigations of changes in meats during preservation: Study of the changes which take place in meats during preservation by various methods, with particular reference to the cause of such changes and their effect upon the wholesomeness and nutritive value of the product.....	4, 217. 20
Supervision of operations conducted under certificates of exemption: Under this project premises are examined to ascertain whether the shippers are retail butchers, retail dealers, or farmers, and hence entitled to operate under certificates of exemption, as provided under the meat-inspection law; also to see that the premises in which animals are slaughtered or where meat and meat products are prepared by or for persons who make interstate shipments under exemption from inspection are maintained in a sanitary condition and that the articles so shipped are sound, healthful, wholesome, and fit for human food.....	3, 207. 33	Investigation of pathological conditions noted during meat inspection: Investigation of any abnormal, unusual, or hitherto unnoted condition of interest, directly or indirectly, from the meat-inspection viewpoint, which may be encountered during routine Federal meat inspection, special emphasis being laid upon infectious conditions and those characterized by malignancy.....	9, 962. 89
Examination of imported meats and meat food products: Operations under this project are directed to prevent the importation of meat and meat food products of cattle, sheep, swine, and goats which		Investigation of trichinosis and measles, and other zoological investigations relating to meat inspection, with a view to improve methods of meat inspection in so far as parasitic diseases of food animals are concerned.....	1, 439. 49
		Investigations upon the control of the house fly and other insects in establishments operating under Federal meat inspection.....	27. 65
		Total.....	3, 460, 756. 26

The meat-inspection work described in the preceding paragraphs was conducted at Washington, D. C., and 233 stations and substations in the field. The approximate cost and the character of the work conducted at each of the 133 principal stations are given below, substations being included with main stations.

*Distribution of meat-inspection work and expenditures by stations.*

Station.	Nature of work. <sup>1</sup>	Amount.	Station.	Nature of work. <sup>1</sup>	Amount.
Albany, N. Y.....	a, b, c, d.....	\$9, 595. 94	Bellevue Falls, Vt.....	b, c, d.....	\$2, 963. 00
Albert Lea, Minn.....	a, b, c, d.....	7, 438. 24	Bethesda, Md.....	p.....	179. 53
Allentown, Pa.....	a, b, c, d, e, f.....	8, 000. 20	Bisbee, Ariz.....	a, b, c, d.....	1, 601. 34
Alton, Ill.....	a, b, c, d.....	3, 430. 74	Bismarck, N. Dak.....	j.....	14. 50
Andalusia, Ala.....	a, b, c.....	44. 67	Boise, Iowa.....	a, b, c, d, i.....	172. 55
Arkansas City, Kans.....	a, b, c, d, i.....	3, 213. 15	Boston, Mass.....	a, b, c, d, e, f, g, i, j, o.....	92, 349. 03
Atlanta, Ga.....	c.....	19. 44	Bridgeport, Conn.....	c.....	1, 362. 42
Auburn, Me.....	a, b, c, d, i.....	2, 840. 00	Brightwood, Md.....	d.....	36. 07
Augusta, Ga.....	a, b, c, d, e, f, j, l.....	14, 809. 85	Brooklyn, N. Y.....	a, b, c, d, f, i.....	40, 881. 03
Austin, Minn.....	a, b, c, d, e.....	18, 714. 80	Buffalo, N. Y.....	a, b, c, d, j.....	69, 387. 91
Baltimore, Md.....	a, b, c, d, f, i.....	45, 592. 97	Burlington, Vt.....	a, b, c, e, i.....	2, 011. 09

<sup>1</sup> The letters in this column have the following meaning: a, ante-mortem inspection of animals for slaughter; b, post-mortem inspection of animals; c, supervision of the preparation and distribution of meats; d, miscellaneous meat inspection; e, supervision of operations conducted under certificates of exemption; f, inspection of meats for the United States Navy; g, inspection at public markets; h, investigations of pathological conditions noted during meat inspection; i, laboratory inspection of samples of meat and meat food products; j, examination of imported meat and meat food products; k, purchase of meat-inspection brands; l, preparation and distribution of branding ink; m, bacteriological investigations of meat and meat food products; n, investigations of changes in meats in cold storage; o, special supervisory inspection; p, investigations of trichinosis and measles; q, investigations upon the control of the house fly.



*Distribution of meat-inspection work and expenditures by stations—Continued.*

Station.	Nature of work.	Amount.	Station.	Nature of work.	Amount.
Calais, Me.	a, b, c.	\$1,124.50	Marshalltown, Iowa.	a, b, c, d.	\$6,001.30
Cedar Rapids, Iowa.	a, b, c, d.	25,439.75	Mason City, Iowa.	a, b, c, d.	9,262.21
Cheyenne, Wyo.	a, b, c, d.	4,089.68	Memphis, Tenn.	a, c, d.	8,521.48
Chicago, Ill.	a, b, c, d, h, i, o.	530,877.90	Menominee, Mich.	a, b, c, d.	1,979.00
Cincinnati, Ohio.	a, b, c, d.	84,739.67	Milwaukee, Wis.	a, b, c, d, e.	61,466.67
Cleveland, Ohio.	a, b, c, d, o.	72,326.64	Morristown, Tenn.	a, b, c, d, i.	3,876.78
Columbus, Ohio.	a, b, c, d.	5,634.78	Moscow, Idaho.	a, b, c, d, i.	1,601.26
Cortland, N. Y.	a, b, c, d.	9,000.39	Nashville, Tenn.	a, b, c, d, o.	9,710.32
Cumberland, Md.	a, b, c, d, e, g, i, j.	1,320.00	Natchez, Miss.	a, b, c, d, e.	9,526.67
Davenport, Iowa.	a, b, c, d, i.	4,948.51	National Stock Yards, Ill.	a, b, c, d, i.	119,595.27
Dayton, Ohio.	a, b, c, d.	12,937.71	Nebraska City, Nebr.	a, b, c, d.	6,219.22
Denver, Colo.	a, b, c, d, i.	34,669.69	Newark, N. J.	a, b, c, d, g, i, j.	35,205.42
Detroit, Mich.	a, b, c, d, i, j.	38,563.48	New Haven, Conn.	a, b, c, d, i.	9,239.68
Dubuque, Iowa.	a, b, c, d.	3,273.16	New Orleans, La.	a, b, c, d, f, i.	18,417.50
Duluth, Minn.	a, b, c, d, j.	4,500.36	New York, N. Y.	a, b, c, d, e, f, g, i, j.	185,752.52
Eau Claire, Wis.	a, b, c, d.	4,283.65	Norfolk, Va.	c, d, i.	4,010.15
El Paso, Tex.	c, j.	4,725.65	North Tazewell, Va.	a, b, c, d.	3,323.38
Evansville, Ind.	a, b, c, d.	5,645.20	Ogden, Utah.	a, b, c, d, i.	5,553.61
Fargo, N. Dak.	c.	1,320.00	Oklahoma, Okla.	a, b, c, d, f.	45,277.50
Faribault, Minn.	a, b, c, d.	1,800.00	Ottumwa, Iowa.	a, b, c, d.	24,733.16
Fergus Falls, Minn.	a, b, c, d.	1,920.00	Paterson, N. J.	a, b, c, d.	17,338.22
Fort Smith, Ark.	c, d, i.	1,320.00	Peoria, Ill.	a, b, c, d.	10,493.21
Fort Wayne, Ind.	a, b, c, d.	4,946.24	Philadelphia, Pa.	a, b, c, d, e, f, g, i, j, o.	90,617.44
Fort Worth, Tex.	a, b, c, d, i, q.	68,564.52	Pittsburg, Kans.	a, b, c.	2,000.00
Grand Rapids, Wis.	a, b, c.	2,980.00	Pittsburgh, Pa.	a, b, c, d, j.	34,490.55
Hallstead, Pa.	a, b, d.	1,981.40	Portland, Me.	a, b, c, d, g, i, j.	8,552.52
Harrisburg, Pa.	a, b, c, d.	9,052.37	Portland, Oreg.	a, b, c, d, i, j.	14,124.73
Hartford, Conn.	c.	1,333.75	Pottsville, Pa.	a, b, c, d.	5,993.33
Haverhill, Mass.	a, b, c, d.	6,692.91	Providence, R. I.	a, b, c, d, f.	25,301.73
Houston, Tex.	a, b, c, d, i.	11,951.60	Pueblo, Colo.	a, b, c.	4,056.25
Huntington, W. Va.	a, b, c, d.	876.59	Quincy, Ill.	c, g.	1,320.00
Indianapolis, Ind.	a, b, c, d, i.	69,679.14	Reno, Nev.	a, b, c, d.	3,907.46
Jacksonville, Ill.	a, b, c.	3,200.00	Richland Center, Wis.	a, b, c.	806.09
Jefferson, Wis.	a, b, c, d.	1,959.14	Richmond, Ind.	a, b, c.	2,736.68
Jersey City, N. J.	a, b, c, d.	44,454.47	Richmond, Va.	a, b, c, d.	14,490.83
Kansas City, Kans.	a, b, c, d, i, o.	284,221.18	Rochester, N. Y.	g.	1,323.10
La Crosse, Wis.	a, b, c, d, e.	4,020.00	St. Louis, Mo.	a, b, c, d, g.	66,695.19
Lafayette, Ind.	a, b, c, d.	4,400.95	Salt Lake City, Utah.	c.	1,660.56
Lewiston, Idaho.	a, b, c, d, i.	3,340.84	San Diego, Cal.	a, b, c, d, f, j.	6,787.85
Logansport, Ind.	a, b, c, d, o.	8,424.73	San Francisco, Cal.	a, b, c, d, f, g, i, j.	29,169.24
Los Angeles, Cal.	a, b, c, d, f, g, i.	35,574.65	Sault Ste. Marie, Mich.	j.	15.00
Louisville, Ky.	a, b, c, d.	19,270.08	Seattle, Wash.	a, b, c, d, f, i, j.	29,530.23
Madison, Ind.	a, b, c, d.	1,850.77	Shreveport, La.	c, d.	1,857.29
Manchester, N. H.	c, d, g.	1,502.83	Sioux City, Iowa.	a, b, c, d.	77,942.24

## BUREAU OF PLANT INDUSTRY.

*Classification of expenditures for the fiscal year ended June 30, 1916.*

	Project.	Salaries.				Travel, station, and field expenses.	Equipment.		
		Statutory.	Lump fund.		Total.		Apparatus, instruments, laboratory.	Furniture.	Miscella- neous.
			In Wash- ington.	Out of Washington.					
1	Administration .....	\$75,598.75	\$24,253.20	-----	\$99,851.95	\$822.97	\$398.51	\$1,032.97	\$1,136.16
2	Laboratory of plant pathology...	8,368.00	24,705.49	\$784.51	33,858.00	1,708.96	587.26	181.56	212.74
3	Fruit-disease investigations...	5,663.33	33,000.00	343.25	44,006.58	7,563.93	1,365.47	837.20	1,002.45
4	Investigations in forest pathol- ogy	4,520.00	16,909.00	28,147.35	49,576.35	13,580.69	1,632.50	432.89	1,488.45
5	Cotton and truck disease inves- tigations.	9,438.06	26,827.88	11,401.08	47,667.02	9,629.21	1,504.29	127.40	654.91
6	Crop physiology and breeding investigations.	10,552.17	15,127.40	13,431.76	39,111.33	6,500.25	287.15	635.93	1,871.03
7	Soil-bacteriology and plant-nu- trition investigations.	6,737.84	24,823.05	3,418.91	34,979.80	1,604.74	4,023.04	113.87	439.39
8	Soil-fertility investigations.....	1,480.00	25,725.94	-----	27,205.94	983.10	2,944.03	80.86	608.73
9	Crop acclimatization and cotton- breeding investigations.	3,832.34	21,051.83	7,450.87	32,335.04	5,728.54	272.90	186.63	251.22
10	Drug-plant, poisonous-plant, physiological, and fermenta- tion investigations.	11,035.73	31,649.83	6,119.48	48,805.04	3,278.13	2,734.00	252.45	985.36
11	Agricultural technology and fiber-plant investigations.	9,215.84	16,716.27	-----	25,932.11	1,218.24	472.39	51.22	201.49
12	Grain standardization .....	16,457.23	18,087.84	36,810.32	71,355.39	6,483.93	941.48	412.87	835.88
13	Biophysical investigations.....	4,962.67	13,521.67	3,852.17	22,336.51	1,631.77	1,577.57	35.65	328.80
14	Seed-testing laboratories.....	9,380.00	16,735.74	5,586.84	31,702.58	1,300.54	353.19	82.01	316.16
15	Cereal investigations.....	18,895.94	56,466.66	43,119.12	118,481.72	23,840.81	736.37	374.65	2,227.25
16	Tobacco investigations.....	4,140.00	5,134.00	14,149.75	23,423.75	2,378.00	341.10	11.60	161.22
17	Paper-plant investigations.....	3,242.50	4,547.50	637.50	8,427.50	1,161.87	474.72	96.49	794.25
18	Alkali and drought resistant plant investigations.	2,140.83	12,849.17	3,121.57	18,111.57	4,141.24	176.88	154.32	450.55
19	Sugar-plant investigations.....	1,200.00	11,972.68	11,876.62	25,049.30	9,880.35	2,181.56	652.61	1,036.64
20	Investigations in economic and systematic botany.	9,930.97	16,067.94	-----	25,998.91	1,608.23	485.42	168.53	180.55
21	Dry-land agriculture investiga- tions.	6,904.17	16,579.50	73,752.52	97,236.19	15,574.73	234.86	1,815.77	13,002.46



*Distribution of meat-inspection work and expenditures by stations—Continued.*

Station.	Nature of work.	Amount.	Station.	Nature of work.	Amount.
Sioux Falls, S. Dak.	a, b, c, d, e.	\$18,652.53	Topeka, Kans.	a, b, c, d.	\$7,756.80
Smithfield, Mass.	d.	2.85	Walla Walla, Wash.	a, b, c, d.	4,720.98
South Omaha, Nebr.	a, b, c, d, h, i.	169,286.89	Washington, D. C.	a, b, c, d, e, g, i, j, k, l, m, n, p.	162,963.48
South St. Joseph, Mo.	a, b, c, d.	107,336.58	Waterloo, Iowa.	a, b, c, d.	9,086.88
South St. Paul, Minn.	a, b, c, d, e, i.	46,319.76	Watertown, S. Dak.	d.	603.61
Spokane, Wash.	a, b, c, d, e, i.	19,028.84	Wausau, Wis.	a, b, c, d.	1,354.05
Springfield, Mass.	a, b, c, d.	14,937.20	Wheeling, W. Va.	a, b, c, d, g.	18,342.39
Stamford, Conn.	c, d, e, g.	1,200.00	Wichita, Kans.	a, b, c, d, i.	41,331.45
Tacoma, Wash.	a, b, c, d, j.	10,663.54	Wilmington, Del.	a, b, c, d.	6,350.84
Terre Haute, Ind.	a, b, c, d.	5,633.33	Winona, Minn.	a, b, c.	6,200.00
Texarkana, Tex.	c.	1,327.25	Worcester, Mass.	a, b, c, d, g.	8,976.78
Toledo, Ohio.	a, b, c.	8,800.04			

## ERADICATION OF FOOT-AND-MOUTH DISEASE.

Total expenditures as above.....	\$631,158.58
Unexpended balance (estimated).....	646,082.67

Total allotment..... 1,277,241.25

A continuation of the work of eradication of foot-and-mouth disease which started in the fiscal year 1915. The work was carried on principally in Illinois, where 458 herds were found infected with or exposed to the disease and destroyed. Seven herds were also destroyed in New York and one herd each in Indiana, Michigan, Minnesota, and Massachusetts.

631,158.58

## LIVE-STOCK PRODUCTION IN CANE-SUGAR AND COTTON DISTRICTS.

Total expenditures as above.....	\$59,582.61
Outstanding liabilities, Aug. 31 (estimated)	20.08
Unexpended balance (estimated).....	397.31

Total allotment..... 60,000.00

Distributed among the several subactivities as follows:

Experimental work: The object of this work is to determine the commercial possibilities of producing live stock in the cane-sugar and cotton districts of the South, and includes studies of the best and most economical methods of crop production and of feeding and handling live stock under the conditions obtaining in this region.

\$39,562.30

Extension work: Dissemination of information relative to the best methods to be used in producing live stock in the cane-sugar and cotton districts of the South; the work being at present confined principally to the State of Louisiana and including demonstrations in the production of beef cattle, hogs, horses, mules, and poultry, in dairying, and in forage-crop production.

20,040.39

Total..... 59,602.69

## BUREAU OF PLANT INDUSTRY.

*Classification of expenditures for the fiscal year ended June 30, 1916.*

Stationery.	Rent.	Telegraph, telephone, and postage.	Freight, express, and drayage.	Furnishing of heat, light, power, electricity.	Forage purchased in bulk.	Fuel.	Specified items not otherwise classified.	Miscellaneous supplies, services, etc.	Total.	
\$2,058.73	\$123.00	\$271.46	\$28.98	.....	.....	.....	\$394.67	\$836.11	\$106,955.51	1
510.33	25.00	18.23	165.90	.....	.....	.....	998.52	2,252.47	40,518.97	2
305.27	1,061.03	104.22	322.97	\$32.79	.....	.....	49.54	2,202.24	58,853.69	3
555.52	43.50	296.24	304.74	.....	.....	.....	37.44	1,602.61	69,550.93	4
630.69	701.00	105.52	490.68	137.40	.....	\$13.60	32.87	3,139.48	64,834.07	5
1,192.79	1,598.00	260.88	342.25	201.15	\$223.99	.....	142.87	833.11	53,200.73	6
827.56	.....	24.80	254.15	.....	.....	.....	18.68	6,408.24	48,694.27	7
150.12	.....	22.17	116.57	.....	.....	.....	10.83	1,729.52	33,851.87	8
875.18	260.00	50.53	73.51	.....	.....	32.75	8.00	961.01	41,035.31	9
336.44	230.00	32.94	131.93	2.25	75.89	84.84	50.59	1,991.24	58,991.10	10
239.70	37.50	51.85	64.23	.....	.....	.....	38.39	462.75	28,769.87	11
1,335.44	5,520.00	433.70	565.79	23.82	.....	.....	130.64	1,115.78	89,154.72	12
208.00	720.00	20.81	225.70	53.01	.....	123.78	69.20	612.89	27,943.69	13
511.67	.....	375.90	98.50	.....	.....	.....	.....	2,148.43	36,888.98	14
1,499.91	1.00	235.22	521.96	.....	469.48	147.72	92.64	4,492.41	153,121.14	15
146.04	140.00	8.24	85.16	.....	.....	.....	25.50	2,064.06	28,784.67	16
135.81	.....	3.07	69.80	.....	.....	.....	14.99	833.21	12,011.71	17
205.53	.....	29.43	130.79	.....	.....	76.04	58.93	147.85	23,683.13	18
439.06	450.79	126.77	374.17	.....	.....	.....	27.64	2,027.71	42,246.60	19
617.50	216.66	48.99	10.23	.....	.....	.....	10.89	214.52	29,650.43	20
940.13	400.00	352.85	1,126.70	550.11	954.92	1,170.60	12,865.45	7,180.44	153,405.21	21

## BUREAU OF PLANT INDUSTRY—Continued.

Classification of expenditures for the fiscal year ended June 30, 1916—Continued.

	Project.	Salaries.				Travel, station, and field expenses.	Equipment.		
		Statutory.	Lump fund.		Total.		Apparatus, instruments, laboratory.	Furniture.	Miscella- neous.
			In Wash- ington.	Out of Washington.					
22	Western irrigation agriculture investigations.	\$13,236.92	\$5,239.16	\$39,516.62	\$57,992.70	\$4,219.77	\$240.19	\$500.75	\$8,730.18
23	Pomological investigations.....	22,516.05	47,084.00	11,224.00	80,824.05	22,597.94	901.36	553.36	1,391.21
24	Horticultural investigations....	14,729.31	18,913.17	6,835.42	40,477.90	10,176.90	645.21	682.87	1,392.75
25	Arlington farm.....	14,393.66	6,125.45	.....	20,519.11	11.82	.....	40.00	2,261.79
26	Experimental gardens and grounds.	42,203.25	4,118.99	.....	46,322.24	.....	.....	78.29	4,194.41
27	Foreign seed and plant introduction.	37,005.08	21,549.00	17,173.56	75,727.64	5,620.60	.....	730.28	4,172.20
28	Forage-crop investigations.....	12,358.50	29,561.76	19,659.82	61,580.08	11,589.09	.....	764.09	2,798.89
29	Seed distribution.....	36,086.84	20,476.35	3,294.50	59,857.69	1,228.60	.....	422.67	5,910.03
30	Demonstrations on reclamation projects.	.....	3,770.00	19,410.94	23,180.94	8,018.40	274.81	363.10	2,929.89
31	Citrus-canker investigation and eradication.	.....	.....	103,576.25	103,576.25	23,180.78	.....	200.80	1,581.21
	Total.....	416,225.98	594,590.47	484,694.73	1,495,511.18	207,354.13	25,786.26	12,073.69	63,548.25

## PROJECT STATEMENTS.

## ADMINISTRATION.

Total expenditures as above.....	\$106,955.51
Outstanding liabilities, Aug. 31 (estimated)...	746.47
Unexpended balance (estimated).....	386.77

Total allotment..... 108,088.75

This project covers the administration of the business affairs of the bureau and general direction of all its investigational activities, and includes the offices of chief and assistant chief of bureau, the office of chief clerk, editorial office, office of records, library, central files section, and supply section... 107,701.98

## LABORATORY OF PLANT PATHOLOGY.

Total expenditures as above.....	\$40,518.97
Outstanding liabilities, Aug. 31 (estimated)...	1,240.85
Unexpended balance (estimated).....	308.18

Total allotment..... 42,068.00

Distributed among the several subactivities as follows:

Central laboratory of plant pathology: Study and identification of fungi and bacteria parasitic on plants, with a view to the discovery of remedies and methods of preventing diseases caused by them. Diseased material is received from all parts of the United States and abroad for examination and advice given as to methods of treatment. 31,278.68

Pathological collections: Maintenance of an herbarium of pathogenic specimens, also mycological and host indexes of new species and list of plants which they attack, and a mycological exchange with American and foreign scientists; and the identification of pathological material received by correspondence or otherwise..... 10,481.14

Total..... 41,759.82

## FRUIT-DISEASE INVESTIGATIONS.

Total expenditures as above.....	\$58,853.69
Outstanding liabilities, Aug. 31 (estimated)...	2,066.08
Unexpended balance (estimated).....	258.56

Total allotment..... 61,178.33

Distributed among the several subactivities as follows:

Supervision: General direction of field experiments and demonstrations, preparation of publications, miscellaneous laboratory experiments, and clerical routine..... 7,709.36

General orchard diseases: Laboratory studies and field tests and demonstrations to develop methods of eradication or control of pear blight, little peach, peach yellows, crown gall, apple canker and black heart, root rot, and other diseases of orchard fruits; and a special study of spraying materials and apparatus..... 11,841.27

Grape and small-fruit diseases: Research work on diseases of the grape and cranberry and other small fruits, including a study of the life history of the anthracnoses and other fungi, the various pathological factors which produce diseases, and the most effective means of combating them..... 11,538.59

Citrus and subtropical fruit diseases: Investigations of fungous and other diseases of the orange, lemon, mango, pineapple, avocado, pomegranate, etc., including attention to the fungous decays of these fruits in storage, in transit, and on the market..... 9,940.12

Orchard-spraying experiments: Study of the effects of different spraying remedies, such as the russetting of apples by Bordeaux mixture, peach foliage injury by spraying with fungicides, etc.; and tests and demonstrations of spraying methods in various sections where for any cause failure has occurred..... 5,235.04



## BUREAU OF PLANT INDUSTRY—Continued.

Classification of expenditures for the fiscal year ended June 30, 1916—Continued.

Stationery.	Rent.	Telegraph, telephone, and postage.	Freight, express, and drayage.	Furnishing of heat, light, power, electricity.	Forage purchased in bulk.	Fuel.	Specified items not otherwise classified.	Miscellaneous supplies, services, etc.	Total.	
\$893.91		\$226.89	\$265.65	\$70.41	\$1,209.10	\$890.10	\$3,157.80	\$3,240.47	\$81,637.92	22
1,117.63	\$191.25	245.98	560.85	25.79		35.70	94.36	10,200.25	118,739.73	23
1,427.38	74.00	137.75	558.59	349.78	47.05	48.39	35.85	7,954.37	64,008.79	24
33.45		120.31	10.44	309.08	600.85	1,507.02	471.23	1,252.66	27,137.76	25
2.52		7.40	42.88			35.80	99.80	2,500.30	53,283.64	26
1,938.51	176.50	417.20	944.32	291.40	471.65	1,207.19	5,156.02	2,726.04	99,579.55	27
252.67	1,084.61	46.68	314.99				2.80	3,633.37	82,067.27	28
2,071.14	251.78	240.93	12,455.80	980.00	147.00	622.99	50.84	227,907.23	312,146.70	29
353.52	790.87	62.60	278.49			380.94	52.73	656.68	37,344.97	30
290.37	150.00	40.85	23.57				13.25	4,431.76	133,488.84	31
22,104.52	14,246.49	4,420.41	20,960.29	3,026.99	4,199.93	6,377.46	124,212.96	307,759.21	2,211,581.77	

<sup>1</sup> Structures and nonstructural improvements to land, \$21,450.33; mechanics' supplies, \$1,402.04; cleaning and toilet supplies, \$1,360.59.

Fruit rots and spots: Study of the causes and methods of prevention of these diseases while the fruit is in the orchard, in transit, in storage, or on the market..... \$8,199.65

Physiological fruit diseases: Study of diseases resulting from bad soil, malnutrition, frost, and other environmental and physiological conditions..... 6,455.74

Total..... 60,919.77

## INVESTIGATIONS IN FOREST PATHOLOGY.

Total expenditures as above..... \$69,550.93  
Outstanding liabilities, Aug. 31 (estimated). 8,514.83  
Unexpended balance (estimated)..... 3,629.24

Total allotment..... 81,695.00

Distributed among the several subactivities as follows:

Supervision: Planning and supervising field investigations, miscellaneous laboratory experiments in connection with the pathological studies, and general office details... 6,892.88

Diseases of shade and ornamental trees and shrubs: Experiments on the nature and control of these diseases, in cooperation with States, cities, societies, institutions, and private agencies..... 4,895.13

Pathological problems in wood preservation: The devising of better methods of timber preservation by the study of all pathological and mycological aspects of the rotting and staining of structural timber..... 5,704.85

Forest-tree diseases: Field and laboratory studies of the causes and progress of diseases affecting forest trees and shrubs, especially forest nursery stock, including the control of such diseases as interfere with commercial production of forest-tree seedlings and with successful reforestation by planting..... 31,407.17

Imported and epidemic tree diseases: Study of the control of miscellaneous diseases, including white-pine blister rust, the chestnut bark disease, etc., and the dissemination of information by demonstrations, publications, and correspondence relative to the work..... 12,147.84

White-pine blister rust: Special cooperative experiments and demonstrations for the control and eventual eradication of the disease..... \$17,017.89

Total..... 78,065.76

## COTTON AND TRUCK DISEASE INVESTIGATIONS.

Total expenditures as above..... \$64,834.07  
Outstanding liabilities, Aug. 31 (estimated). 741.52  
Unexpended balance (estimated)..... 112.47

Total allotment..... 65,688.06

Distributed among the several subactivities as follows:

Supervision: General direction of field investigations, miscellaneous laboratory experiments, and clerical routine..... 14,339.18

Cotton diseases: General study of cotton diseases and their control, and the breeding of wilt-resistant varieties of cotton adapted to boll-weevil conditions in the eastern part of the cotton belt..... 3,948.26

Truck-crop diseases: Investigations of the causes and control of miscellaneous diseases of truck crops and the breeding of disease-resistant varieties..... 44,631.63

Forage-crop diseases: Study of diseases of forage crops, especially alfalfa, clover, and cowpeas; development of control measures, and breeding of resistant varieties..... 2,656.52

Total..... 65,575.59

## CROP PHYSIOLOGY AND BREEDING INVESTIGATIONS.

Total expenditures as above..... \$53,200.73  
Outstanding liabilities, Aug. 31 (estimated). 1,545.75  
Unexpended balance (estimated)..... 345.69

Total allotment..... 55,092.17

Distributed among the several subactivities as follows:

Supervision: General direction of field investigations, miscellaneous laboratory experiments, and clerical routine..... 5,903.50

Indian cooperation: Breeding and testing of crops which may be grown profitably by the Indians themselves or for which Indian labor may be utilized.....	\$11,364.67	Study of the origin of organic constituents in soils; the causes of infertility, and means of improvement and upbuilding of soils; and the various factors as influenced by fertilizers and soil amendments.....	\$34,149.93
Date culture: Investigations of the life history and physiological requirements of varieties of dates in order to establish date culture on a commercial scale in the United States.....	14,615.00	CROP ACCLIMATIZATION AND COTTON-BREEDING INVESTIGATIONS.	
Fig culture: Development of economical and practical methods for the caprification of Smyrna figs, in order to establish their culture on a commercial scale in this country; and breeding new varieties of figs and caprifigs adapted to American conditions.....	4,966.00	Total expenditures as above.....	\$41,035.31
Citrus-fruit breeding: Development by hybridization and selection of new and hardy types of citrus fruits with a view to extend the area of their growth in the United States.....	12,352.31	Outstanding liabilities, Aug. 31 (estimated)...	278.34
Dry-land arboriculture: Consists of experimental testing of deep-rooted and drought-resistant trees and shrubs better suited for culture in the dry-land regions of the United States than the shallow-rooted annual crops now grown.....	2,655.00	Unexpended balance (estimated).....	98.69
Miscellaneous laboratory and field work: Includes investigations of pistache and truffle culture, electroculture, and the application of stimulation treatments to seeds and plants.....	2,890.00	Total allotment.....	41,412.34
Total.....	54,746.48	Distributed among the several subactivities as follows:	
SOIL-BACTERIOLOGY AND PLANT-NUTRITION INVESTIGATIONS.		Supervision: General direction of field investigations, miscellaneous laboratory experiments, and clerical routine.....	5,053.09
Total expenditures as above.....	\$48,694.27	Acclimatization, adaptation, and breeding of cotton: Investigations of weevil-resistant and drought-resistant types of cotton, and study of the factors of local adjustment....	25,400.34
Outstanding liabilities, Aug. 31 (estimated)...	232.29	Acclimatization, adaptation, and extension of corn: This project especially concerns tropical and subtropical varieties of corn and the extension of the culture of corn into regions where it is either not being grown or is a precarious crop.....	6,850.45
Unexpended balance (estimated).....	311.28	Acclimatization and adaptation of tropical plants: Study of tropical fruits and vegetables in their native habitat, including coffee, cacao, rubber and rubber substitutes, economic palms, and bananas, and their adjustment to conditions in the United States and its insular possessions..	4,009.77
Total allotment.....	49,237.84	Total.....	41,313.65
Distributed among the several subactivities as follows:		DRUG-PLANT, POISONOUS-PLANT, PHYSIOLOGICAL, AND FERMENTATION INVESTIGATIONS.	
Supervision: General direction of the investigations, office routine, and miscellaneous laboratory experiments.....	6,231.53	Total expenditures as above.....	\$58,991.10
Distribution and study of legume bacteria: Study of the life history of the nodule-forming bacteria; experiments in the breeding and selection of more virile types of nitrogen-fixing bacteria, and their distribution for the inoculation of leguminous crops.....	15,493.34	Outstanding liabilities, Aug. 31 (estimated)...	860.73
Soil bacteriology: Investigations of the organisms causing decomposition in organic material in soils; determination of the relationships of the organisms which fix atmospheric nitrogen and those which cause nitrification and denitrification in soils; study of the relation of soil bacteria to the growth of crop plants.....	16,584.92	Unexpended balance (estimated).....	153.90
Nutrition of the date palm: Study of the optimum conditions for nutrition and fruit production of the date palm.....	824.91	Total allotment.....	60,005.73
Plant-nutrition investigations: Study of methods for determining the fertilizer requirements of crops and the functions of the different elements of plant food in their relation to the nutrition and composition of crop plants.....	9,791.86	Distributed among the several subactivities as follows:	
Total.....	48,926.56	Supervision: General direction of field investigations, miscellaneous laboratory experiments, and clerical routine.....	11,530.94
SOIL-FERTILITY INVESTIGATIONS.		Drug and related plants and their products: Study of the culture, handling, and improvement of plants yielding drugs, spices, oils, and related products and by-products, with a view to add profitable new crops and products to American plant industries.....	22,485.91
Total expenditures as above.....	\$33,851.87	Poisonous-plant investigations: Study of the geographical distribution and localization of poisonous plants, with special reference to those areas in which, owing to their abundance or concentration, they are believed to be especially harmful; study of poisonous plants with reference to the nature and pharmacological action of their constituents, methods of eradication, means of avoiding plants harmful to man, etc.....	2,403.05
Outstanding liabilities, Aug. 31 (estimated)...	298.06	Physiological and fermentation investigations: Technical physiological studies of crop plants and their products, conducted, in various instances, in cooperation with pathological and crop investigations of other offices of the bureau.....	23,431.93
Unexpended balance (estimated).....	30.07	Total.....	59,851.83
Total allotment.....	34,180.00		



## AGRICULTURAL TECHNOLOGY AND FIBER-PLANT INVESTIGATIONS.

Total expenditures as above..... \$28,769.87  
 Outstanding liabilities, Aug. 31 (estimated).. 161.26  
 Unexpended balance (estimated)..... 54.71

Total allotment..... 28,985.84

Distributed among the several subactivities as follows:

Agricultural technology: Investigations of free-living and plant-infesting nematodes, improvement of agricultural apparatus, development of apparatus for solar and artificial projection in connection with illustrative work, and studies of various other technological problems ..... 20,155.22

Fiber-plant investigations: Investigation of the possibilities for the commercial culture of sisal, henequen, and similar hard-fiber plants in the United States and insular possessions; extension of flax and hemp industries in this country, both for seed and fiber; investigations of plant fibers used in brushes, upholstery, and other textile lines; laboratory work in measuring and testing tensile strength of fibers; and identification of fibers and fiber plants..... 8,775.91

Total..... 28,931.13

## GRAIN STANDARDIZATION.

Total expenditures as above..... \$89,154.72  
 Outstanding liabilities, Aug. 31 (estimated).. 944.88  
 Unexpended balance (estimated)..... 77.63

Total allotment..... 90,177.23

Distributed among the several subactivities as follows:

Supervision: General direction of grain-standardization investigations, including work at the laboratories maintained outside of Washington; fixing and promulgation of definite grades; and clerical and laboratory routine..... 16,606.47

Grain handling, grading, and transportation: Study of the influence on grades and market values of methods of handling grain on the farm, in transit on cars and steamships, and while in storage; study of the relation between the commercial grade of grain and its milling and baking value; laboratory experiments for determining moisture content, effect of chemical changes, various kinds of damage, shrinkage, etc., and the fundamental causes of deterioration, with a view to establish uniform and definite standards for the grading of commercial grain on the basis of intrinsic value..... 73,493.13

Total..... 90,099.60

## BIOPHYSICAL INVESTIGATIONS.

Total expenditures as above..... \$27,943.69  
 Outstanding liabilities, Aug. 31 (estimated).. 1,821.31  
 Unexpended balance (estimated)..... 197.67

Total allotment..... 29,962.67

Distributed among the several subactivities as follows:

Supervision: General direction of biophysical investigations, office routine, and construction and repair of apparatus..... 7,995.33

Cooperative biophysical investigations: Study and comparison of environmental conditions under which crops can be produced in the semiarid regions; investigation of the most efficient methods of conserving moisture and plant nutrients in the soil, and other related problems..... \$11,849.77

Special biophysical investigations: Development of improved apparatus for the rapid determination of the moisture content of grain during transit; experiments in electro-culture; methods of correcting unfavorable nutrient solutions in the soil which lead to malnutrition of plants; and various other biophysical experiments in cooperation with various offices of the bureau..... 9,919.90

Total..... 29,765.00

## SEED-TESTING LABORATORIES.

Total expenditures as above..... \$36,888.98  
 Outstanding liabilities, Aug. 31 (estimated).. 961.17  
 Unexpended balance (estimated)..... 229.85

Total allotment..... 38,080.00

Distributed among the several subactivities as follows:

Supervision: General supervisory and clerical work in connection with the various activities of the office..... 8,340.00

Seed testing: Making tests at laboratories in and out of Washington for germination and mechanical purity of samples of seeds submitted by farmers and seedsmen..... 15,997.50

Seed purity and vitality investigations: Tests to determine conditions required for rapid and complete germination and greater vitality and to distinguish the characters of closely allied economic seeds, in order to disseminate information as to the identity of various classes of commercial seeds..... 6,140.00

Adulterated-seed investigations: Testing commercial seeds for proof of adulteration, in accordance with law..... 5,322.65

Enforcement of the seed-importation act: Enforcement of the act of Aug. 24, 1912, prohibiting the importation of seeds adulterated or unfit for seeding purposes as defined in the act..... 2,050.00

Total..... 37,850.15

## CEREAL INVESTIGATIONS.

Total expenditures as above..... \$153,121.14  
 Outstanding liabilities, Aug. 31 (estimated).. 5,339.03  
 Unexpended balance (estimated)..... 1,790.77

Total allotment..... 160,250.94

Distributed among the several subactivities as follows:

Supervision: General direction of field investigations, miscellaneous laboratory experiments, and clerical routine..... 20,669.13

Production and improvement of cereal crops and their products: Determination of varietal adaptations of wheat, oats, barley, rice, grain sorghums, broom corn, and other grains, and the factors influencing them; improvement of these crops through selection and hybridization of varieties and races; study and improvement of production methods; study of inheritance in hybrids; identification, description, and classification of varieties..... 29,738.43

Maintenance of cereal field stations: Maintenance of field stations in various sections of the country for the purpose of establishing through experimental work the best cereal varieties for each locality.....	\$50,201.47
Tillage and rotation investigations: Improvement in yield and quality of cereals through better cultural methods and rotation of crops and obviation of the necessity for frequent summer fallowing on certain dry lands of the West.....	1,500.00
Cereal diseases: Laboratory and field experiments and study in the life history of rusts, smuts, scab, and other diseases of grain and of methods for their control; and the breeding of disease-resistant types of grains.....	15,754.89
Corn improvement and production: Laboratory and field experiments in the production and improvement of corn; study of the effects on corn of heridity and environment; production of improved strains for the different geographical sections of the United States; and tests and demonstrations of the best practical methods of seed-corn selections, fumigation, drying, and preservation.....	40,596.25
Total.....	158,460.17

## TOBACCO INVESTIGATIONS.

Total expenditures as above.....	\$28,784.67
Outstanding liabilities, Aug. 31 (estimated)...	327.14
Unexpended balance (estimated).....	28.19
Total allotment.....	29,140.00

Distributed among the several subactivities as follows:	
Supervision: General direction of tobacco investigations in and out of Washington, laboratory experiments, and various details of clerical and scientific work.....	7,075.14
New England cigar-wrapper tobacco investigations: Study of improved methods of breeding, growing, curing, and handling cigar-wrapper tobacco.....	2,451.84
Maryland export tobacco investigations: Study of improved methods of growing, curing, and handling the crop, by means of breeding and selection, fertilization, and systems of rotation.....	1,460.99
Burley tobacco investigations: Development and test of pure strains of standard Burley varieties, determination of the fertilizer requirements and best systems of crop rotation for Burley tobacco, and the development of better cultural and curing methods.....	898.77
Western fire-cured tobacco investigations: Study of the fertilizer requirements, systems of crop rotation, and best cultural methods for producing fire-cured tobacco...	1,132.76
New York binder and filler tobacco investigations: Development of improved types of tobacco by seed selection, the use of fertilizers, and the introduction of systems of crop rotation adapted to the culture of binder and filler leaf.....	1,694.28
Sun-cured, fire-cured, and flue-cured tobacco investigations: Development of improved types of tobacco by the adoption of proper rotation systems, fertilization, and breeding and selection, including the breeding of disease-resistant varieties.....	8,466.08
Pennsylvania cigar-filler investigations: Experiments to improve the yield and quality of cigar filler and binder leaf by breeding and selection and the development of better methods of growing, curing, and handling the crop.....	2,582.92

Miscellaneous tobacco investigations: Study of the physiology, pathology, and chemistry of the tobacco plant in relation to improved methods of growing, curing, fermenting, and handling the crop. This work supplies the fundamentals for the practical work in improving methods of tobacco production.....	\$3,349.03
Total.....	29,111.81

## PAPER-PLANT INVESTIGATIONS.

Total expenditures as above.....	\$12,011.71
Outstanding liabilities, Aug. 31 (estimated)...	1,308.06
Unexpended balance (estimated).....	762.73
Total allotment.....	14,082.50
Distributed among the several subactivities as follows:	
Paper-plant investigations: Utilization of various wild and cultivated plants and crop wastes for paper making, study of the market conditions of these products, and breeding of plants that have paper-making value.....	11,861.50
Breeding flax for oil: Testing and breeding flax with a view to increase the quality and oil content of flaxseed, including rotation experiments and demonstrations.....	1,458.27
Total.....	13,319.77

## ALKALI AND DROUGHT RESISTANT PLANT INVESTIGATIONS.

Total expenditures as above.....	\$23,683.13
Outstanding liabilities, Aug. 31 (estimated)...	174.96
Unexpended balance (estimated).....	562.74
Total allotment.....	24,420.83
Distributed among the several subactivities as follows:	
Supervision: General direction of field investigations and laboratory experiments, and office details.....	4,640.83
Breeding and physiology of alkali and drought resistant plants: Breeding of various crop plants suitable for cultivation under alkali and drought conditions; investigation of native vegetation of arid regions with a view to its use as an indicator in classifying land upon the basis of its crop-producing capabilities; and the development, by introduction and breeding, of drought and alkali resistant varieties of pomegranates.....	13,717.26
Egyptian cotton breeding: Production of varieties of Egyptian cotton yielding fiber of superior quality and thoroughly adapted to growing under irrigation in the southwestern United States.....	5,500.00
Total.....	23,858.09

## SUGAR-PLANT INVESTIGATIONS.

Total expenditures as above.....	\$42,246.60
Outstanding liabilities, Aug. 31 (estimated)...	439.53
Unexpended balance (estimated).....	258.87
Total allotment.....	42,945.00
Distributed among the several subactivities as follows:	
Supervision: General direction of field investigations, miscellaneous laboratory experiments, and clerical routine.....	5,188.50



Sugar-beet investigations: Includes investigations of the status of the sugar-beet industry in the United States, the economic practice in crop production in sugar-beet areas, sugar-beet seed production, and breeding of improved varieties of sugar beets.....	\$28,164.12	Methods of crop production under dry-land conditions: Experiments in crop rotation for the conservation of moisture and maintenance of humus in the soil, and other cultural methods for improving agricultural conditions in the Great Plains area.....	\$112,649.82
Sugar-cane sirup production: Investigations and demonstration of methods for the production of cane sirup, including the breeding, culture, and diseases of cane, the methods of manufacture, standardization, and marketing of sirup, and the utilization of cane by-products, with special reference to the farm production of cane sirup.....	9,333.51	Northern Great Plains field station: Maintenance of an experimental farm to demonstrate the kind and character of plants, shrubs, trees, berries, and vegetables best adapted to the climate and soil of the semi-arid regions.....	31,691.05
Total.....	42,686.13	Total.....	165,109.85
INVESTIGATIONS IN ECONOMIC AND SYSTEMATIC BOTANY		WESTERN IRRIGATION AGRICULTURE INVESTIGATIONS.	
Total expenditures as above.....	\$29,650.43	Total expenditures as above.....	\$81,637.92
Outstanding liabilities, Aug. 31 (estimated)...	3,909.08	Outstanding liabilities, Aug. 31 (estimated)...	1,592.51
Unexpended balance (estimated).....	371.46	Unexpended balance (estimated).....	386.49
Total allotment.....	33,930.97	Total allotment.....	83,616.92
Distributed among the several subactivities as follows:		Distributed among the several subactivities as follows:	
Supervision: General direction of scientific investigations, and clerical routine.....	9,931.17	Supervision: Planning and directing field investigations and conducting routine clerical work.....	12,382.68
Bibliographical work in the interest of botanical science: Maintenance of a card catalogue of botanical and horticultural works, including a list of scientific serials, for the purpose of improving bibliographical facilities for botanical workers.....	2,800.00	Crop production under irrigation: Study of agricultural problems connected with subduing new and reclaimed lands and the best methods of tillage, irrigation, etc., necessary for the utilization of these lands; and the supervision of experimental work in cooperation with other branches of the Bureau of Plant Industry and the Reclamation Service.....	70,577.92
Range investigations: Study of the life history of forage plants of the national ranges; experiments in pasturing and in both natural and artificial reseeding of destructively overgrazed and worn-out range lands.....	1,518.43	Southwestern cotton culture: Introduction into commercial culture in the arid Southwest of profitable strains of long-staple cottons bred and acclimatized to meet local conditions.....	269.83
Economic botany of native races: Utilization of valuable plant species in the western United States, Mexico, and South America, and collection of data regarding plants used by the American aborigines.....	5,114.94	Total.....	83,230.43
Botany of economic grasses: Collection and identification of economic grasses, both native plants and foreign introductions; preservation of authentic and correctly named specimens; and a compilation of a manual of North American grasses.....	7,904.16	POMOLOGICAL INVESTIGATIONS.	
Systematic work in economic botany: Includes an economic monograph of the heather and blueberry families, with special reference to their utilization in the United States; identification and classification of forage plants, ornamental trees and shrubs in the American nursery trade, and miscellaneous plant material; and records of the origin and character of varieties of ornamental plants originating under cultivation.....	6,290.81	Total expenditures as above.....	\$118,739.73
Total.....	33,559.51	Outstanding liabilities, Aug. 31 (estimated)...	8,219.02
DRY-LAND AGRICULTURE INVESTIGATIONS.		Unexpended balance (estimated).....	617.30
Total expenditures as above.....	\$153,405.21	Total allotment.....	127,576.05
Outstanding liabilities, Aug. 31 (estimated)...	11,704.64	Distributed among the several subactivities as follows:	
Unexpended balance (estimated).....	1,294.32	Supervision: General direction of investigations and clerical routine.....	13,691.24
Total allotment.....	166,404.17	Fruit transportation and storage: Study of the causes of deterioration and means of improving the keeping and carrying quality of fruit by better methods of picking, handling, precooling, and proper refrigeration during transit, in storage, and at market terminals.....	41,113.70
Distributed among the several subactivities as follows:		Viticultural investigations: Experiments in the culture of native and foreign varieties of grapes and in methods of handling and marketing grapes and grape products.....	17,147.36
Supervision: Planning and direction of field investigations, and clerical routine incident to the work.....	20,768.98	Fruit-production investigations: Study of the adaptability of fruit varieties to environment in different sections, including the cultivation of fruits under semiarid conditions and in the national forests.....	14,072.30
		Nut-culture investigations: Determination of the range of adaptability of different nuts, the relative value and merit of different varieties, their cultural requirements, and methods of propagation; and the production of improved varieties.....	3,789.14



Fruit improvement through breeding, selection, and domestication: A general study of the laws of inheritance and other principles of fruit breeding involved in the propagation and culture of hardy and disease-resistant varieties in the different fruit-producing regions of the country.....		\$15,473.94	Landscape-gardening and floriculture investigations: Study of the arrangement, effects, and uses of trees, shrubs, and plants on streets, parks, and lawns, and investigations of the efficiency of various systems of plant propagation.....		\$8,823.35
Investigations in systematic pomology: Assembling of general data regarding the origin and history of different fruit varieties in the United States, with special reference to old and little-known varieties; identification and naming of varieties; preparation of illustrations, models, and descriptions, and keys for use in making identification; and the verification of varieties, in order to secure a pure and stable nomenclature of the cultivated American fruits.....		17,653.22	Total.....		69,970.22
Fruit utilization: Investigation of the best and most practical methods of using the lower grades of fruit and surplus stock which can not be marketed profitably in a fresh state.....		4,017.85	ARLINGTON FARM.		
Total.....		126,958.75	Total expenditures as above.....		\$27,137.76
HORTICULTURAL INVESTIGATIONS.			Outstanding liabilities, Aug. 31 (estimated)...		2,212.03
Total expenditures as above.....		\$64,008.79	Unexpended balance (estimated).....		43.87
Outstanding liabilities, Aug. 31 (estimated)...		5,961.43	Total allotment.....		29,393.66
Unexpended balance (estimated).....		39.09	Maintenance of a field laboratory providing facilities for a wide variety of testing, breeding, and selection work and for the investigation of methods of plant propagation; also includes collections of fruit and other horticultural varieties for systematic study, comparison, and description.....		
Total allotment.....		70,009.31			29,349.79
Distributed among the several subactivities as follows:			EXPERIMENTAL GARDENS AND GROUNDS.		
Supervision: General direction of investigations and clerical routine.....		11,194.22	Total expenditures as above.....		\$53,283.64
Vegetable handling and storage: Determination of the factors which govern the successful handling of vegetables, including methods of harvesting, grading, and pre-cooling for transportation and storage, with a view to reduce decay, deterioration, and loss to a minimum.....		3,033.13	Outstanding liabilities, Aug. 31 (estimated)...		567.14
Truck-crop production: Surveys of truck-crop and market-gardening districts to determine the factors which limit crop production or cause crop deterioration; study of the best cultural methods, also of the value of organic soils with reference to their utility in the growing of vegetables; a comprehensive study of the peanut industry; and investigation of the commercial production of vegetable and flower seeds.....		15,035.13	Unexpended balance (estimated).....		42.47
Truck-crop improvement through breeding, selection, and domestication: Development of better strains and varieties; standardization of different varieties of vegetables with a view to secure uniformity in size, season, productiveness, etc.....		5,518.23	Total allotment.....		53,893.25
Irish-potato investigations: A comprehensive study of the culture, handling, and utilization of the potato, including the development of disease-resistant varieties.....		24,852.39	The care and upkeep of the department grounds and greenhouses, including the construction and repair of greenhouses; growing and care of tropical and miscellaneous plants under glass; improvement of grounds (including the planting of trees, shrubs, etc.); experimental work with greenhouse crops, forcing of vegetables, growing florists' crops, etc.; providing greenhouse facilities for vegetable pathological and physiological experiments of various offices of the bureau; and general hybridization work.....		
Vegetable history and nomenclature investigations: Accumulation of data relating to the origin and history of varieties of vegetables, and establishment of a simple and stable nomenclature for the cultivated vegetables.....		1,470.00			53,850.78
Vegetable utilization: Investigations of the best and most practical methods of using the lower grades of vegetables and surplus stock which can not be marketed profitably in a fresh state.....		43.77	FOREIGN SEED AND PLANT INTRODUCTION.		
			Total expenditures as above.....		\$99,579.55
			Outstanding liabilities, Aug. 31 (estimated)...		10,009.34
			Unexpended balance (estimated).....		116.19
			Total allotment.....		109,705.08
			Distributed among the several subactivities as follows:		
			General direction of plant introductions: Securing new and valuable seeds and plants from all parts of the world and distributing them for test among experimenters in this country; maintenance of a plant-quarantine house; publishing inventories and bulletins of foreign introductions; recording all imported material, and other necessary clerical routine.....		45,592.94
			Foreign explorations: This project covers the cost of sending out trained agricultural explorers to investigate agricultural methods and resources of foreign countries and search for seeds and plants that may be useful and profitable to American planters and to assist in the introduction and development of new plant industries.....		12,680.87

Plant-introduction field investigations: Maintenance of plant-introduction gardens at Chico, Cal., Miami and Brooksville, Fla., and Rockville, Md., for the purpose of testing and propagating new plant introductions and distributing them to suitable localities in this country.....

\$51,315.08

Total..... 109,588.89

#### FORAGE-CROP INVESTIGATIONS.

Total expenditures as above..... \$82,067.27

Outstanding liabilities, Aug. 31 (estimated).. 2,602.06

Unexpended balance (estimated)..... 679.17

Total allotment..... 85,348.50

Distributed among the several subactivities as follows:

Supervision: General direction of field investigations and clerical routine..... 24,129.50

Forage-crop production and improvement: Tests and experiments with alfalfa, clover, grass, and miscellaneous forage crops, in both arid and semiarid regions, with a view to the development of better varieties through breeding and selection, improvement of cultural methods, etc.; weed and tillage investigations; and study of the cactus plant as a forage crop and as human food..... 60,539.83

Total..... 84,669.33

#### SEED DISTRIBUTION.

Total expenditures as above..... \$312,146.70

Outstanding liabilities, Aug. 31 (estimated).. 21,777.60

Unexpended balance (estimated)..... 732.54

Total allotment..... 334,656.84

Distributed among the several subactivities as follows:

Supervision: General direction of the purchase and distribution of seeds and plants, including routine office work..... 26,091.76

Congressional distribution: Purchase, transportation, handling, packeting, assembling, and mailing of vegetable, flower, cotton, tobacco, and lawn-grass seeds, Dutch bulbs, strawberry plants, and miscellaneous seeds and plants for distribution; cleaning seed purchased for distribution, and investigation of seed-distribution methods; and commercial production of Dutch bulbs, with a view to establish the industry on a commercial basis in the United States..... \$255,831.36

Purchase and distribution of new and rare seeds: Dissemination of new and rare high-grade seed of crops to sections where the data of the department indicate such crops to be of considerable promise..... 52,001.18

Total..... 333,924.30

#### DEMONSTRATIONS ON RECLAMATION PROJECTS.

Total expenditures as above..... \$37,344.97

Outstanding liabilities, Aug. 31 (estimated).. 1,209.45

Unexpended balance (estimated)..... 1,445.58

Total allotment..... 40,000.00

Assistance to settlers on the reclamation projects in the development of local agricultural industries by supplying information, making suggestions, and conducting demonstrations relating to agricultural industries and farm practices..... 38,554.42

#### CITRUS-CANKER INVESTIGATION AND ERADICATION.

Total expenditures as above..... \$133,488.84

Outstanding liabilities, Aug. 31 (estimated).. 15,166.55

Unexpended balance (estimated)..... 153,012.52

Total allotment..... <sup>1</sup> 301,667.91

Study of the cause, nature, means of communication, and methods of control of citrus canker; and the application of measures for its eradication and control in cooperation with State authorities and growers.... 148,655.39

<sup>1</sup> Includes \$300,000 provided in the urgent deficiency act approved Feb. 28, 1916, and a balance of \$1,667.91 from the appropriation of \$35,000 included in the urgent deficiency act approved Jan. 25, 1915.



## FOREST SERVICE.

*Classification of expenditures for the fiscal year ended June 30, 1916.*

	Project.	Salaries.				Travel, station, and field expenses.	Equipment.		
		Statutory.	Lump fund.		Total.		Apparatus, instruments, laboratory.	Furniture.	Miscella- neous.
			In Wash- ington.	Out of Washington.					
1	Washington office.....	\$201,333.82	13,117.50	\$56,492.17	\$424,921.78	\$54,121.30	\$7,974.57	\$4,488.41	\$11,069.99
2	Headquarters, district 1.....	44,212.07		138,015.36	182,227.43	28,284.09			10,782.87
3	Headquarters, district 2.....	45,373.62		59,336.25	104,709.87	19,491.32			4,919.26
4	Headquarters, district 3.....	33,562.66		48,249.73	81,812.39	13,699.42			2,082.51
5	Headquarters, district 4.....	32,751.93		54,533.26	87,285.19	16,973.22			4,207.37
6	Headquarters, district 5.....	42,619.40		59,224.15	101,843.55	15,466.02			10,091.39
7	Headquarters, district 6.....	42,805.44		108,559.00	151,364.44	18,272.34			3,525.12
8	Headquarters, district 7.....	11,352.78			24,470.28	6,219.61			215.90
9	Forest-products laboratory.....	27,446.98		80,784.58	108,231.56	7,480.63			12,265.97
10	Supply depot, Ogden, Utah.....	13,735.82		1,600.00	15,335.82	21.15			45,537.69
11	Property auditor, Ogden, Utah.....	7,165.00		810.00	7,975.00	932.22			
12	Priest River experiment station.....			7,008.01	7,008.01	565.77			
13	Fremont experiment station.....	137.51		3,261.74	3,399.25	126.67			1,288.61
14	Wagon Wheel Gap experiment station.....			2,049.91	2,049.91	.35			1,343.99
15	Fort Valley experiment station.....	1,260.43	5,894.20	7,154.63	1,374.00	401.44			
16	Utah experiment station.....	310.00	7,859.33	8,169.33	361.15	912.79			
17	Converse experiment station.....		1,864.96	1,864.96	280.10	1,112.51			
18	Feather River experiment station.....		7,939.07	7,939.07	1,059.84	272.67			
19	Wind River experiment station.....		3,129.23	3,129.23	465.18	1,107.57			
20	Total (exclusive of the national forests).	504,067.46	180,213.29	646,610.95	1,330,891.70	185,194.38	21,216.78	21,782.49	111,137.65
NATIONAL FORESTS.									
21	Absaroka.....	843,443	13,153.06	4,466.44	17,619.50	1,007.87			1,279.87
22	Alamo.....	610,529	8,930.14	9,834.41	18,764.55	1,914.05			746.41
23	Angeles.....	885,216	33,115.55	9,975.51	43,091.06	4,176.39			5,428.32
24	Apache.....	1,184,582	15,080.81	8,273.80	23,354.61	1,645.02			1,513.86
25	Arapaho.....	636,899	14,193.88	3,307.65	17,501.53	1,084.36			2,133.39
26	Arkansas.....	622,003	14,442.21	13,355.84	27,798.05	1,762.87			2,630.10
27	Ashley.....	988,480	10,938.89	2,856.63	13,795.52	886.31			673.34
28	Battlement.....	651,227	9,985.00	7,597.87	17,582.87	1,538.80			691.98
29	Beartooth.....	662,855	10,309.44	3,164.86	13,474.30	1,384.32			525.49
30	Beaverhead.....	1,338,197	13,600.00	3,341.92	16,941.92	1,154.18			570.17
31	Bighorn.....	1,123,430	13,136.92	12,199.05	25,335.97	1,451.49			3,563.63
32	Bitterroot.....	1,047,805	11,744.72	11,981.98	23,726.70	1,399.22			2,908.22
33	Blackfeet.....	873,414	12,509.17	12,318.28	24,827.45	2,010.12			2,156.81
34	Black Hills.....	628,541	18,405.33	12,579.91	30,985.24	2,705.15			1,823.67
35	Boise.....	1,054,302	13,488.89	3,479.03	16,967.92	511.21			1,521.63
36	Bonneville.....	607,013	9,046.14	6,579.02	15,625.16	1,702.48			647.68
37	Bridger.....	572,083	5,663.90	2,150.04	7,813.94	483.36			672.23
38	Cabinet.....	831,494	9,554.99	14,894.56	24,449.55	1,298.14			2,336.61
39	Cache.....	781,383	14,428.07	8,411.57	22,839.64	748.98			1,791.36
40	California.....	822,364	12,502.49	14,235.27	26,737.76	1,687.15			5,826.86
41	Caribou.....	693,056	12,712.22	3,865.01	16,577.23	1,042.02			1,293.77
42	Carson.....	854,562	16,363.34	22,440.09	38,803.43	2,211.86			1,852.25
43	Cascade.....	1,016,569	10,284.43	10,445.38	20,729.81	1,443.19			3,421.70
44	Challis.....	1,260,600	8,846.67	4,327.99	13,174.66	272.30			1,120.18
45	Chelan.....	677,389	6,975.00	6,060.34	13,035.34	1,077.52			2,053.96
46	Chiricahua.....	474,638	6,388.33	2,810.07	9,198.40	362.60			835.94
47	Chugach.....	5,430,018	6,411.12	8,286.52	14,697.64	3,704.99			2,276.69
48	Clearwater.....	785,179	9,193.61	22,891.74	32,085.35	1,334.12			3,075.17
49	Cleveland.....	591,750	18,548.90	7,114.11	25,663.01	3,126.66			1,684.36
50	Cochetopa.....	907,532	9,292.79	6,562.43	15,855.22	1,304.07			1,566.70
51	Coconino.....	1,599,677	17,808.03	13,101.03	30,909.06	2,554.26			3,064.71
52	Coeur d'Alene.....	650,336	12,068.03	35,195.65	47,263.68	2,951.58			3,125.23
53	Colorado.....	494,656	8,743.05	3,124.07	11,867.12	1,287.02			477.34
54	Columbia.....	776,480	9,073.45	19,598.30	28,671.75	1,305.38			4,724.87
55	Colville.....	756,395	11,400.00	6,607.23	18,007.23	2,152.05			1,501.19
56	Coronado.....	959,961	11,087.33	9,349.87	20,437.20	2,060.78			1,295.07
57	Crater.....	834,434	15,727.49	28,775.86	44,503.35	1,663.52			3,875.94
58	Crook.....	867,102	8,655.84	1,750.85	10,406.69	1,103.86			1,033.43
59	Custer.....	430,142	7,338.33	1,591.72	8,930.05	567.54			862.60
60	Dakota.....	6,054	825.00		825.00	29.19			56.03
61	Datil.....	2,671,925	19,868.02	13,599.27	33,467.29	2,660.59			2,899.82
62	Deerlodge.....	834,709	21,024.17	11,735.03	32,759.20	2,767.33			2,391.10
63	Deschutes.....	1,287,486	12,316.67	10,664.79	22,981.46	2,225.20			1,849.26
64	Dixie.....	733,007	7,281.38	883.70	8,165.08	454.89			415.65
65	Durango.....	614,275	8,086.40	4,427.66	12,514.06	586.27			673.24
66	Eldorado.....	550,350	10,228.30	8,177.06	18,405.36	1,525.94			3,125.01
67	Fillmore.....	700,626	11,729.99	2,064.99	13,794.98	647.45			1,549.12
68	Fishlake.....	661,699	10,407.08	5,012.82	15,419.90	412.04			3,832.03
69	Flathead.....	1,812,019	18,474.17	24,870.43	43,344.60	2,108.11			5,175.68
70	Florida.....	309,546	10,538.88	4,632.38	15,171.26	1,253.46			1,630.67
71	Fremont.....	888,887	11,554.16	6,275.36	17,829.52	1,163.57			1,834.30
72	Gallatin.....	565,575	11,026.11	2,741.62	13,767.73	823.59			1,336.12
73	Gila.....	1,437,147	17,244.45	14,456.73	31,701.18	2,116.76			2,375.69
74	Gunnison.....	908,909	11,420.57	4,702.14	16,122.71	1,086.97			634.57
75	Harney.....	556,220	16,693.88	11,314.01	28,007.89	1,399.08			2,467.95
76	Hayden.....	388,940	8,433.03	3,226.52	11,659.55	909.13			564.38
77	Helena.....	688,346	14,341.10	2,095.85	16,436.95	846.61			1,090.25
78	Holy Cross.....	576,945	10,943.04	4,379.10	15,322.14	917.83			1,010.83
79	Humboldt.....	691,758	8,409.72	1,095.17	9,504.89	583.13			2,092.08
80	Idaho.....	1,193,513	9,724.42	9,294.63	19,019.05	608.52			2,634.56

## FOREST SERVICE.

Classification of expenditures for the fiscal year ended June 30, 1916.

Stationery.	Rent.	Telegraph, telephone, and postage.	Freight, express, and drayage.	Furnishing of heat, light, power, and electricity.	Forage purchased in bulk.	Fuel.	Specified items not otherwise classified.	Miscellane- ous supplies, services, etc.	Total.	
\$22,085.30	\$123.00	\$7,740.74	\$3,352.82		\$1.05		\$1,190.82	\$11,615.41	\$548,685.19	1
	624.20	305.95	3,655.87				17.85	3,307.59	229,205.85	2
	3,854.50	491.72	760.35					14.44	134,241.46	3
	3,942.19	971.93	748.46				34.90	130.59	103,422.39	4
	3,012.64	1,301.56	677.44					669.13	114,126.55	5
	6,824.94	811.28	456.83		45.61		1.40		135,541.02	6
	7,981.03	935.92	1,310.99		293.26		72.73	1,825.12	185,580.95	7
		3.61	101.31					153.26	31,163.97	8
		300.47	1,798.70					131,324.86	18,907.22	9
26,014.86	2,972.06		7,210.26					374.07	128,002.20	10
									8,907.22	11
	94.23	3.47	167.01		216.16			3.05	9,346.31	12
		13.00	289.34		35.50			3.09	5,210.84	13
		30.97	49.71		63.27			4.10	2,599.75	14
	238.71	31.56	189.17		71.08				9,971.94	15
		1.37	147.79		208.43			3.34	10,003.92	16
		2.40	71.67						2,491.80	17
	165.82	2.22	553.15		179.51			25.43	11,032.61	18
	292.91	4.28	17.20					2.95	3,911.75	19
48,100.16	30,126.23	12,952.45	21,558.07		1,113.87		1,317.70	19,379.10	1,804,770.58	20
	121.00	142.42	510.11		876.04		18.70	154.57	21,730.08	21
	326.95	29.16	864.59		560.51		9.84	46.30	23,262.36	22
	423.97	635.02	3,109.31		1,091.77		15.96	35.45	58,007.25	23
	183.15	88.18	668.58		513.59		41.28	1.50	28,009.77	24
	241.70	191.32	394.73		519.33		18.09	2.40	22,086.85	25
	121.84	215.73	522.42		986.64		31.53	31.05	34,100.23	26
	327.50	54.20	221.41		651.20		34.28	23.05	16,666.81	27
	365.40	93.55	992.99		393.32		31.47	20.07	21,710.45	28
	421.82	139.35	167.83		329.06		10.92	138.37	16,591.46	29
	300.00	51.90	90.80		535.24		13.79	39.15	19,697.15	30
		136.83	721.58		399.14		24.88	94.68	31,728.20	31
	869.00	163.53	477.61		144.02		6.76	803.69	30,498.75	32
	709.90	73.03	583.93		618.12		37.65	128.89	31,145.90	33
	82.20	62.08	438.86		328.07		63.58	4.00	36,492.85	34
	670.19	105.90	441.95		394.76		23.84	8.60	20,646.00	35
		41.93	134.97		432.74		20.90	1.50	18,907.36	36
	11.36	94.63	434.12		310.00		14.54	4.70	9,839.18	37
	370.05	108.79	1,668.87		40.49		45.55	2,178.16	32,496.21	38
	172.95	101.60	444.23		433.43		90.63	52.06	26,674.88	39
	621.50	85.65	1,950.74		554.70			9.22	37,473.58	40
	618.12	86.10	375.45		427.11		13.36	7.85	20,441.01	41
	630.45	151.61	714.72		809.79		29.89	11.95	45,215.95	42
	140.50	29.04	701.26		380.52		.96	19.75	26,869.73	43
	240.65	5.66	322.83		467.95		9.65		15,613.88	44
	380.00	9.44	667.69		75.00		11.43	9.18	17,319.56	45
	2.00	3.00	180.43				23.10	105.00	10,710.47	46
	169.42	78.65	593.15				3.40	138.30	21,662.24	47
	360.00	201.68	3,409.64		65.55			1,609.86	42,141.37	48
	583.72	132.51	627.62		640.68			35.08	32,493.64	49
	396.70	121.12	780.81		639.85		24.98		20,699.45	50
	864.00	108.10	673.63		1,032.57		5.70	4.50	39,216.53	51
	752.75	341.19	1,425.08		660.13		152.48	50.95	56,723.07	52
		163.20	495.54		254.70		5.23	6.00	14,556.15	53
	850.02	50.72	860.25		817.93		4.46	32.58	37,317.96	54
	666.30	54.03	375.11		81.96		9.20	4.55	22,851.62	55
	680.02	83.38	1,315.78		706.02		7.90	10.65	26,596.80	56
	894.85	299.00	1,090.68		315.43		4.20	29.96	52,676.93	57
	320.63	64.40	357.13		357.38		4.95		13,648.47	58
	322.40	36.53	98.33		262.63		9.00	28.95	11,118.03	59
			18.25						928.47	60
	603.05	44.07	772.24		1,099.98		16.45	1.00	41,564.49	61
	988.50	177.65	410.65		1,362.14		82.80	89.20	41,028.57	62
	612.38	81.60	345.83		208.48		7.72	32.96	28,344.89	63
	348.75	56.11	131.22		304.71		2.75	5.07	9,884.23	64
	635.09	238.10	134.88		519.66		4.18	15.15	15,350.63	65
	534.60	39.48	921.88		326.71		6.25	15.05	24,900.28	66
	306.50	46.11	424.46		628.38		33.70	4.72	17,435.42	67
	277.80	39.18	333.25		353.10		18.30	69.40	20,755.00	68
	485.00	114.73	1,058.15				27.65	957.26	53,271.18	69
	23.33	129.55	304.19		734.06		51.65	46.35	19,344.52	70
	481.30	41.59	515.92		587.36		6.75	8.50	22,468.81	71
	308.60	95.79	199.26		350.76		19.30	17.50	16,918.65	72
	497.10	38.00	2,022.74		1,536.31		14.60		40,302.38	73
	472.64	119.94	383.48		239.75		19.99	4.00	19,234.05	74
	668.14	5.05	422.81		428.56		13.95	22.55	33,435.98	75
	607.87	68.05	125.40		486.47		12.85	3.00	14,436.70	76
	600.00	123.99	127.47		150.95		21.60	43.30	19,441.12	77
	436.00	140.69	431.59		502.60		17.85	15.15	18,794.68	78
	364.25	92.30	218.53		477.84		21.35	233.55	13,587.92	79
	511.75	6.65	359.72		76.30		8.75	1.65	23,226.95	80



## FOREST SERVICE—Continued.

Classification of expenditures for the fiscal year ended June 30, 1916—Continued.

Project.		Salaries.				Travel, station, and field expenses.	Equipment.		
		Statutory.	Lump fund.		Total.		Apparatus, instruments, laboratory.	Furniture.	Miscella- neous.
			In Wash- ington.	Out of Washington,					
NATIONAL FORESTS— continued.		<i>Acres net.</i>							
81	Inyo.....	1,341,421	\$7,886.11	\$833.37	\$8,719.48	\$860.95			\$328.31
82	Jefferson.....	1,042,912	17,030.54	3,927.37	20,957.91	1,904.32			1,763.31
83	Kaibab.....	1,072,170	4,312.22	6,738.58	11,050.80	103.27			1,199.41
84	Kaniksu.....	457,966	13,950.84	15,533.49	29,484.33	2,254.78			2,148.66
85	Kansas.....		845.83	583.77	1,429.60	112.48			19.07
86	Klamath.....	1,474,846	14,306.83	27,930.28	42,237.11	2,261.90			2,166.59
87	Kootenai.....	1,337,991	16,529.62	18,751.64	35,281.26	894.46			3,064.27
88	La Sal.....	547,088	7,459.17	2,573.76	10,032.93	531.16			836.15
89	Lassen.....	992,804	11,690.83	25,245.73	36,936.56	2,855.75			3,659.44
90	Leadville.....	935,229	11,129.16	2,596.37	13,725.53	1,027.12			716.69
91	Lemhi.....	1,067,741	11,341.66	1,136.95	12,478.61	911.07			291.32
92	Lewis and Clark.....	811,727	10,025.82	5,437.73	15,463.55	1,988.09			1,785.95
93	Lincoln.....	551,760	8,768.48	3,381.60	12,150.08	1,094.53			729.40
94	Lolo.....	850,505	15,341.39	12,791.86	28,133.25	1,237.54			2,534.13
95	Luquillo.....	32,975		2,270.81	2,270.81	397.64			131.55
96	Madison.....	960,120	12,225.83	2,116.31	14,342.14	1,261.07			440.76
97	Malheur.....	1,057,682	8,700.00	6,468.59	15,168.59	1,012.78			1,097.11
98	Manti.....	781,800	16,075.00	5,161.93	21,236.93	923.92			999.98
99	Manzano.....	783,602	9,139.72	2,776.83	11,916.55	877.51			759.62
100	Medicine Bow.....	469,786	10,939.71	17,235.49	28,175.20	1,440.72			1,069.12
101	Michigan.....	89,466	5,016.37	4,737.84	9,754.21	1,717.47			750.41
102	Minam.....	398,086	6,364.67	6,368.85	12,733.52	635.54			1,132.61
103	Minnesota.....	197,832	7,662.22	3,639.69	11,301.91	252.27			1,445.48
104	Minidoka.....	579,405	9,888.32	3,284.19	13,172.51	576.37			1,681.07
105	Missoula.....	1,028,127	10,961.67	5,574.42	16,536.09	1,049.30			2,304.82
106	Modoc.....	1,182,298	11,085.55	4,017.88	15,103.43	1,850.87			1,132.34
107	Mono.....	1,266,497	7,598.08	1,568.89	9,166.97	1,047.27			279.44
108	Monterey.....	401,492	5,345.83	3,775.87	9,121.70	1,335.02			1,191.86
109	Montezuma.....	700,571	12,015.85	1,983.62	13,999.47	1,118.17			659.14
110	Nebraska.....	206,074	4,085.57	17,379.66	21,465.23	471.47			7,805.25
111	Nevada.....	1,237,943	7,224.82	710.69	7,935.51	475.70			609.16
112	Nezperce.....	1,703,168	12,108.03	15,015.19	27,123.22	906.26			2,305.81
113	Ochoco.....	716,482	9,000.00	5,876.07	14,876.07	541.48			1,150.89
114	Okanogan.....	1,487,136	11,357.78	12,939.04	24,296.82	2,067.82			1,815.99
115	Olympic.....	1,534,680	9,572.78	21,047.65	30,620.43	2,404.05			3,052.41
116	Oregon.....	1,031,902	17,570.55	39,181.37	56,751.92	1,306.76			6,663.61
117	Ozark.....	294,916	12,520.86	6,252.90	18,773.76	1,422.53			1,536.51
118	Palisade.....	551,984	9,682.50	5,739.25	15,421.75	626.64			878.36
119	Payette.....	832,109	16,920.55	13,398.92	30,319.47	1,067.14			5,168.00
120	Pend d'Oreille.....	678,054	13,459.45	14,621.28	28,080.73	1,210.85			1,730.72
121	Pike.....	1,137,659	22,578.89	25,028.24	47,607.13	2,952.83			4,098.15
122	Plumas.....	1,146,645	17,385.79	17,858.21	35,244.00	4,893.75			2,377.44
123	Powell.....	689,685	8,370.81	2,704.29	12,075.10	275.86			841.87
124	Preseott.....	1,434,122	17,011.80	6,539.14	23,550.94	1,452.51			946.52
125	Rainier.....	1,316,057	12,983.61	14,263.71	27,247.32	1,473.47			2,311.59
126	Rio Grande.....	1,137,067	13,265.83	5,821.65	19,087.48	1,780.15			918.99
127	Routt.....	847,882	12,641.66	12,910.87	25,552.53	1,330.20			3,225.41
128	Ruby.....	343,185	3,915.28	6,266.64	10,181.92	502.83			1,296.73
129	St. Joe.....	577,135	11,210.69	28,853.26	40,063.95	2,374.89			2,954.27
130	Salmon.....	1,621,477	14,673.05	8,710.87	23,383.92	899.40			621.82
131	San Isabel.....	598,912	9,888.06	3,674.23	13,562.29	957.30			870.57
132	San Juan.....	618,075	9,515.27	5,428.46	14,943.73	1,194.75			949.18
133	Santa Barbara.....	1,695,175	21,891.08	9,739.28	31,630.36	2,444.91			1,146.94
134	Santa Fe.....	1,355,034	25,097.74	20,593.09	45,690.83	4,019.68			4,469.19
135	Santa Rosa.....	270,072	6,905.01	1,116.95	8,021.96	406.77			441.59
136	Santiam.....	606,776	6,307.51	13,066.17	19,373.68	574.28			1,693.21
137	Sawtooth.....	1,203,554	9,510.01	4,519.98	14,029.99	664.30			756.16
138	Selway.....	1,694,171	9,798.34	21,921.96	31,720.30	741.59			3,193.08
139	Sequoia.....	2,196,199	19,618.87	14,178.84	33,797.71	3,627.21			3,085.33
140	Sevier.....	729,614	14,058.89	1,586.90	15,645.79	1,018.56			770.69
141	Shasta.....	828,367	17,053.22	23,045.57	40,098.79	3,456.53			2,165.00
142	Shoshone.....	1,576,349	12,370.83	3,699.62	16,070.45	1,756.58			787.15
143	Sierra.....	1,493,474	17,612.51	12,787.47	30,399.98	2,442.87			4,609.32
144	Sioux.....	174,649	7,164.45	1,064.65	8,229.10	839.73			244.91
145	Siskiyou.....	1,346,789	13,499.99	19,905.59	33,405.58	2,251.90			3,440.08
146	Sitgreaves.....	667,168	14,051.68	6,191.72	20,243.40	1,508.03			1,651.29
147	Siuslaw.....	541,280	8,914.99	13,854.76	22,769.75	1,902.00			1,542.17
148	Snoqualmie.....	695,332	10,711.67	16,006.57	26,718.24	1,240.07			2,527.55
149	Sopris.....	596,852	11,083.61	5,124.52	16,208.13	803.57			803.57
150	Stanislaus.....	809,679	14,762.23	16,848.57	31,610.80	1,959.15			2,017.06
151	Superior.....	857,330	12,729.76	7,843.23	20,572.99	1,917.56			1,910.59
152	Tahoe.....	561,013	19,768.06	20,218.16	39,986.22	2,737.80			3,648.83
153	Targhee.....	779,342	12,185.54	3,791.35	15,976.89	1,105.78			1,118.56
154	Teton.....	1,908,074	9,393.32	9,001.29	18,394.61	274.75			1,968.16
155	Toiyabe.....	1,907,643	7,637.78	1,220.11	8,857.89	880.07			684.40
156	Tongass.....	15,454,110	11,693.75	11,934.43	23,628.18	3,470.50			4,851.32
157	Tonto.....	1,996,280	14,507.63	6,400.96	20,908.59	2,798.54			1,200.93
158	Trinity.....	1,428,168	14,608.04	38,577.67	53,185.71	3,373.81			6,509.66
159	Tusayan.....	1,605,823	14,439.73	8,168.81	22,608.54	1,861.20			2,050.04
160	Uinta.....	1,005,252	14,999.58	11,083.63	26,083.21	1,388.54			4,064.44
161	Umatilla.....	486,183	7,600.00	4,580.00	12,180.00	500.88			927.96
162	Umpqua.....	1,011,417	10,421.33	17,407.38	27,828.71	1,548.58			3,578.00

Discontinued.

## FOREST SERVICE—Continued.

Classification of expenditures for the fiscal year ended June 30, 1916—Continued.

Stationery.	Rent.	Telegraph, telephone, and postage.	Freight, express, and drayage.	Furnishing of heat, light, power, electricity.	Forage purchased in bulk.	Fuel.	Specified items not otherwise classified.	Miscellanc- ous supplies, services, etc.	Total.	
	\$728.90	\$13.73	\$5.86		\$106.94		\$1.80	\$3.00	\$10,768.97	81
		230.78	216.00		491.90		3.00		25,640.94	82
	221.75	5.12	239.53		452.94		6.75	104.57	13,384.14	83
	1,147.21	41.90	444.63		497.34		12.75	18.47	36,050.07	84
	94.50	12.42	4.25					5.39	1,677.71	85
	517.33	283.42	1,614.09		1,096.11			413.16	50,589.71	86
	847.75	34.40	1,011.36		952.25		55.56	295.87	42,437.18	87
	256.76	53.30	397.23		155.54		5.60	3.00	12,271.67	88
	333.73	45.43	2,134.39		1,595.04		24.20	1.50	47,636.04	89
		98.93	202.06		716.58		35.87	5.25	16,528.03	90
	384.17	36.00	104.55		411.28		22.93	37.75	14,677.68	91
	512.50	114.90	258.70		74.85		36.33	441.01	20,675.88	92
	345.38	27.50	505.89		489.60		12.55		15,354.93	93
	666.60	122.49	834.72		576.08		48.45	664.01	34,817.27	94
									2,800.00	95
	425.25	130.87	97.63		147.63		23.35		16,868.70	96
	356.05	68.41	513.82		543.70		11.95	2.25	18,774.66	97
	534.00	104.35	160.87		801.33		27.26	70.87	24,559.51	98
	12.00	90.15	147.12		454.73		29.21		14,286.89	99
		125.70	2,811.46		496.00		59.83	25.83	34,203.86	100
	189.25	91.80	214.34					95.31	12,812.79	101
	456.00	85.49	175.68		284.99				15,516.13	102
	456.50	73.55	136.27		132.93		12.30	1.25	13,800.16	103
	383.50	53.50	244.08		326.41		16.09	443.70	16,897.23	104
	883.16	187.26	422.45		356.64		41.82	184.03	21,915.57	105
	531.01	65.38	622.03		352.04		3.00	29.75	19,689.85	106
	322.25	27.20	119.53				9.00	6.90	10,978.56	107
	77.28	52.76	916.71		398.84		.64	.97	13,095.78	108
	578.75	102.97	108.74		375.00		16.66	57.95	17,016.85	109
	133.25	3.15	766.21		7.70		4.80	103.25	30,760.31	110
	427.45	75.45	184.61		520.62		16.70	42.00	10,287.20	111
	503.38	66.86	1,441.37		299.95		5.95	160.04	32,812.84	112
	462.13	63.10	158.74		340.30		7.50	59.14	17,659.35	113
	366.50	119.08	693.56		72.85		15.79	18.77	29,467.18	114
	24.00	148.98	901.27		10.70		92.14	44.45	37,298.43	115
	815.05	211.32	2,794.95		1,228.85		15.00	325.11	70,112.57	116
	24.00	87.10	622.78		1,201.56		29.82	54.99	23,753.05	117
	385.00	41.50	260.93		335.99		9.84	16.39	17,976.40	118
	501.65	37.25	875.87		1,073.89		23.53	2.60	39,069.40	119
	726.16	241.49	634.54		199.01		152.77	114.75	33,091.02	120
	808.50	329.84	3,518.72		1,518.11		51.43	91.10	60,975.81	121
	638.50	95.02	1,319.85		1,904.70		61.24	46.75	46,581.25	122
	144.00	.82	39.40		12.00		26.41	3.10	13,418.56	123
	1,025.13	73.03	774.53		1,160.10		9.50	9.95	29,002.21	124
	1.00	170.75	708.88				10.58	63.40	31,986.99	125
	425.00	203.83	182.64		241.70		65.96	1.65	22,907.40	126
	664.25	96.66	449.74		399.01		48.03	1,348.06	33,113.89	127
	197.71	106.70	42.81		461.67		32.10	107.75	12,930.22	128
	615.73	41.59	785.11		1,720.41		38.06	572.84	49,166.85	129
	528.25	84.88	374.50		661.69		10.26	204.44	26,769.16	130
	271.10	168.70	421.84		567.61			7.40	16,826.81	131
	434.40	54.31	260.14		52.64		23.92	1.70	17,914.77	132
	21.50	257.05	583.56		819.21			7.80	36,911.33	133
	1,592.72	96.94	1,665.83		2,207.47		48.36	45.30	59,836.32	134
	339.09	120.99	228.05		444.38		10.15	92.15	10,105.13	135
	40.08	116.29	708.91		596.23		1.76	.30	23,104.74	136
	330.00	38.05	71.61		218.04		26.73	5.10	16,139.98	137
	362.46	25.96	1,710.76		450.00		2.97	779.54	38,986.66	138
	159.37	18.37	1,695.73		1,109.21			52.76	43,545.69	139
	270.00	5.11	487.27		586.42		59.61	7.10	18,850.55	140
	889.39	263.45	2,540.64		928.10		20.49	117.50	50,479.89	141
	544.00	103.31	511.04		551.21		30.38	23.85	20,377.97	142
	51.91	37.66	1,066.85		1,460.13		2.64	11.65	40,083.01	143
	75.36	15.77	245.98				1.98	188.25	9,841.08	144
	462.50	204.06	1,353.58		251.73		60.55	79.44	41,509.42	145
	423.00	51.78	884.10		1,136.77		22.20		25,920.57	146
	188.25	69.70	416.86		596.45			35.10	27,520.28	147
	951.17	225.65	499.34		344.73		3.80		32,510.55	148
	309.60	132.37	413.61		766.29		25.14	.15	19,462.45	149
	833.99	44.24	433.57		1,870.66		13.36	244.22	39,027.05	150
	428.00	39.51	417.83		146.67		45.56	24.65	25,503.36	151
	790.55	214.26	2,430.81		1,302.91		2.25	127.85	51,241.48	152
	529.63	149.38	160.61		579.21		23.42	.60	19,644.08	153
	368.60	84.00	214.21		192.40		8.23	.85	21,505.81	154
	406.42	96.00	313.97		255.91		19.40	1.00	11,515.06	155
	744.90	59.58	308.64		848.44		65.75	49.69	33,178.56	156
	5.40	15.46	868.64				9.80	200.00	26,855.80	157
	688.27	87.84	3,877.92		2,081.17		10.60	41.27	69,856.25	158
	527.73	72.89	705.97		882.45		18.39		28,727.21	159
	480.00	44.15	467.12		707.52		27.02	14.20	33,276.20	160
	306.50	107.72	181.32				12.00	3.15	14,219.53	161
	768.37	134.91	1,043.86		519.34		2.25	22.57	35,446.59	162



## FOREST SERVICE—Continued.

Classification of expenditures for the fiscal year ended June 30, 1916—Continued.

Project.		Salaries.				Travel, station, and field expenses.	Equipment.		
		Statutory.	Lump fund.		Total.		Apparatus, instruments, laboratory.	Furniture.	Miscella- neous.
			In Wash- ington.	Out of Washington.					
NATIONAL FORESTS— continued.									
	<i>Acres, net.</i>								
163	Uncompahgre.....	790, 589	\$12, 296. 94	\$9, 826. 59	\$22, 123. 53	\$1, 202. 90			\$1, 247. 79
164	Wallowa.....	993, 181	13, 582. 63	9, 161. 80	22, 744. 43	1, 395. 26			2, 593. 89
165	Wasatch.....	607, 732	10, 856. 41	16, 903. 47	27, 765. 88	1, 517. 81			2, 143. 93
166	Washakie.....	387, 447	3, 248. 05	583. 75	3, 837. 80	327. 02			158. 02
167	Washington.....	1, 454, 356	8, 773. 89	9, 243. 45	18, 017. 34	860. 15			873. 54
168	Weiser.....	562, 743	10, 169. 73	7, 172. 45	17, 342. 18	529. 05			1, 107. 05
169	Wenaha.....	738, 938	7, 400. 00	4, 961. 03	12, 361. 03	673. 20			1, 664. 48
170	Wenatchee.....	657, 644	11, 453. 06	15, 424. 59	26, 877. 65	1, 833. 00			2, 348. 31
171	White River.....	848, 337	10, 935. 84	4, 338. 17	15, 274. 01	1, 544. 75			883. 78
172	Whitman.....	877, 564	14, 202. 49	9, 895. 56	24, 098. 05	1, 633. 94			2, 485. 17
173	Wichita.....	61, 480	2, 666. 66	1, 808. 25	4, 474. 91	342. 67			929. 18
174	Wyoming.....	899, 980	9, 690. 57	9, 317. 09	19, 007. 66	1, 182. 87			1, 328. 01
175	New forests.....	1, 285, 727	9, 913. 90	60, 630. 96	70, 544. 86	5, 744. 52			6, 389. 56
Total, national forests.....		1, 797, 886. 37		1, 518, 974. 85	3, 316, 861. 22	225, 627. 33			300, 378. 22
Grand total.....		2, 301, 953. 83	\$180, 213. 29	\$2, 165, 585. 80	4, 647, 752. 92	410, 821. 71	\$21, 216. 78	\$21, 782. 49	411, 515. 87

<sup>a</sup> Includes wages and subsistence of temporary employees.

## PROJECT STATEMENTS.

WASHINGTON OFFICE. <sup>1</sup>		Distributed among the several subactivities as follows:	
Total expenditures.....	\$663, 614. 42	District forester's office: General supervision of 26 national forests, aggregating 22,686,093 acres.....	\$25, 176. 53
Outstanding liabilities, Aug. 31.....	16, 395. 63	Operation: Administrative and supervisory work done in or directed by this office (supplementing the part time and expenses of the national forest force).....	90, 138. 71
Total allotment.....	680, 010. 05	Silviculture: Administrative and investigative work done in or directed by this office (supplementing the part time and expenses of the national forest force)....	41, 752. 15
Distributed among the several subactivities as follows:		Grazing: Administrative and investigative work done in or directed by this office (supplementing the part time and expenses of the national forest force).....	4, 829. 85
Forester's office: General administrative supervision and control of all activities in the Washington office, Forest Products Laboratory, district headquarters, and 154 national forests, and administration of land purchased under the Weeks law.	108, 446. 22	Lands: Administrative and investigative work done in or directed by this office (supplementing the part time and expenses of the national forest force).....	59, 441. 27
Operation: Administrative and supervisory work done in or directed by this office..	192, 391. 42	Research: Administrative and investigative work done in or directed by this office.....	7, 867. 34
Silviculture: Administrative, supervisory, and State and Federal cooperative work done in or directed by this office.....	90, 285. 90	Total.....	229, 205. 85
Grazing: Administrative and investigative work done in or directed by this office..	28, 940. 12	District 2 (Denver, Colo.).	
Lands: Administrative work done in or directed by this office.....	32, 924. 65	Total expenditures.....	\$134, 031 <sup>1</sup> 10
Research: Administrative and investigative work done in or directed by this office:		Outstanding liabilities, Aug. 31.....	210. 36
Washington office.....	\$95, 696. 88	Total allotment.....	134, 241. 46
Forest Products Laboratory, Madison, Wis.....	131, 324. 86	Distributed among the several subactivities as follows:	
Total.....	227, 021. 74	District forester's office: General supervision of 31 national forests, aggregating 20,661,327 acres.....	20, 978. 77
Total.....	680, 010. 05	Operation: Administrative and supervisory work done in or directed by this office (supplementing the part time and expenses of the national forest force).....	54, 080. 93
DISTRICT HEADQUARTERS.			
District 1 (Missoula, Mont.)			
Total expenditures.....	\$228, 555. 29		
Outstanding liabilities, Aug. 31.....	650. 56		
Total allotment.....	229, 205. 85		

<sup>1</sup>Includes supervision of Forest Products Laboratory, at Madison, Wis.

## FOREST SERVICE—Continued.

Classification of expenditures for the fiscal year ended June 30, 1916—Continued.

Stationery.	Rent.	Telegraph, telephone, and postage.	Freight, express, and drayage.	Furnishing of heat, light, power, electricity.	Forage purchased in bulk.	Fuel.	Specified items not otherwise classified.	Miscellane- ous supplies, services, etc.	Total. services, etc.	
-----	\$497.59	\$106.33	\$228.67	-----	\$868.44	-----	-----	-----	\$26,275.25	163
-----	384.50	71.85	876.78	-----	349.00	-----	\$12.25	\$9.50	28,437.46	164
-----	50.50	109.06	701.32	-----	573.03	-----	17.60	19.70	32,898.83	165
-----	-----	109.03	47.49	-----	178.06	-----	6.02	1.50	4,664.94	166
-----	3.00	132.99	281.55	-----	-----	-----	24.72	42.70	20,235.99	167
-----	409.65	68.50	222.75	-----	136.97	-----	14.40	13.20	19,813.75	168
-----	-----	73.14	252.40	-----	23.05	-----	9.20	7.15	15,063.65	169
-----	427.43	130.49	947.22	-----	179.74	-----	19.12	1,382.32	34,145.28	170
-----	403.35	136.01	389.66	-----	425.06	-----	32.59	10.15	18,799.36	171
-----	346.27	76.79	505.77	-----	470.55	-----	16.55	12.95	29,646.04	172
-----	-----	20.70	67.00	-----	279.40	-----	1.75	32.13	6,147.74	173
-----	333.75	94.10	199.94	-----	580.94	-----	24.83	85.55	22,837.65	174
-----	2,221.29	859.94	1,230.93	-----	605.59	-----	24.46	153.84	87,774.99	175
-----	65,375.47	16,105.29	105,206.63	-----	81,462.12	-----	3,329.03	17,809.75	4,132,155.06	
\$48,100.16	95,501.70	29,057.74	126,764.70	-----	82,575.99	-----	<sup>b</sup> 4,646.73	37,188.85	5,936,925.64	

<sup>b</sup> Advertising.

Silviculture: Administrative and investigative work done in or directed by this office (supplementing the part time and expenses of the national forest force)... \$15,903.80

Grazing: Administrative and investigative work done in or directed by this office (supplementing the part time and expenses of the national forest force)..... 4,951.95

Lands: Administrative and investigative work done in or directed by this office (supplementing the part time and expenses of the national forest force)..... 31,806.96

Research: Administrative and investigative work done in or directed by this office.. 6,519.05

Total..... 134,241.46

*District 3 (Albuquerque, N. Mex.).*

Total expenditures..... \$103,070.25

Outstanding liabilities, Aug. 31..... 352.14

Total allotment..... 103,422.39

Distributed among the several subactivities as follows:

District forester's office: General supervision of 16 national forests, aggregating 19,053,912 acres..... 18,551.63

Operation: Administrative and supervisory work done in or directed by this office (supplementing the part time and expenses of the national forest force)..... 32,996.90

Silviculture: Administrative and investigative work done in or directed by this office (supplementing the part time and expenses of the national forest force).... 15,674.62

Grazing: Administrative and investigative work done in or directed by this office (supplementing the part time and expenses of the national forest force)..... 10,208.71

Lands: Administrative and investigative work done in or directed by this office (supplementing the part time and expenses of the national forest force)..... 22,865.28

Research: Administrative and investigative work done in or directed by this office..... 3,125.25

Total..... 103,422.39

*District 4 (Ogden, Utah).*

Total expenditures..... \$113,879.19

Outstanding liabilities, Aug. 31..... 247.36

Total allotment..... 114,126.55

Distributed among the several subactivities as follows:

District forester's office: General supervision of 31 national forests, aggregating 27,957,017 acres..... 22,283.88

Operation: Administrative and supervisory work done in or directed by this office (supplementing the part time and expenses of the national forest force)..... 36,317.17

Silviculture: Administrative and investigative work done in or directed by this office (supplementing the part time and expenses of the national forest force).... 20,962.64

Grazing: Administrative and investigative work done in or directed by this office (supplementing the part time and expenses of the national forest force)..... 10,647.96

Lands: Administrative and investigative work done in or directed by this office (supplementing the part time and expenses of the national forest force)..... 22,594.85

Research: Administrative and investigative work done in or directed by this office.. 1,320.05

Total..... 114,126.55

*District 5 (San Francisco, Cal.).*

Total expenditures..... \$135,496.88

Outstanding liabilities, Aug. 31..... 44.14

Total allotment..... 135,541.02

Distributed among the several subactivities as follows:

District forester's office: General supervision of 18 national forests, aggregating 19,667,758 acres..... 31,918.11

Operation: Administrative and supervisory work done in or directed by this office (supplementing the part time and expenses of the national forest force)..... 56,295.65



Silviculture: Administrative and investigative work done in or directed by this office (supplementing the part time and expenses of the national forest force).....	\$13,550.19	Lands: Administrative and investigative work done in or directed by this office (supplementing the part time and expenses of the national forest force).....	\$50,788.01
Grazing: Administrative and investigative work done in or directed by this office (supplementing the part time and expenses of the national forest force).....	4,975.70	Research: Administrative and investigative work done in or directed by this office.....	17,897.01
Lands: Administrative and investigative work done in or directed by this office (supplementing the part time and expenses of the national forest force).....	16,246.17	Total.....	185,580.95
Research: Administrative and investigative work done in or directed by this office..	12,555.20	<i>District 7 (Washington, D. C.).</i>	
Total.....	135,541.02	Total expenditures.....	\$31,014.77
<i>District 6 (Portland, Oreg.).</i>		Outstanding liabilities, Aug. 31.....	149.20
Total expenditures.....	\$185,509.55	Total allotment.....	31,163.97
Outstanding liabilities, Aug. 31.....	71.40	Distributed among the several subactivities as follows:	
Total allotment.....	185,580.95	District forester's office: General supervision of 5 national forests, aggregating 1,320,920 acres, and 15 areas purchased or approved for purchase under the Weeks law and aggregating 1,285,727 acres.....	
Distributed among the several subactivities as follows:		Operation: Administrative and supervisory work done in or directed by this office (supplementing the part time and expenses of the national forest force).....	14,016.89
District forester's office: General supervision of 27 national forests, aggregating 44,073,253 acres.....		Silviculture: Administrative and investigative work done in or directed by this office (supplementing the part time and expenses of the national forest force)....	8,157.96
Operation: Administrative and supervisory work done in or directed by this office (supplementing the part time and expenses of the national forest force).....		Lands: Administrative and investigative work done in or directed by this office (supplementing the part time and expenses of the national forest force).....	4,569.52
Silviculture: Administrative and investigative work done in or directed by this office (supplementing the part time and expenses of the national forest force)....		Research: Administrative and investigative work done in or directed by this office.....	4,265.86
Grazing: Administrative and investigative work done in or directed by this office (supplementing the part time and expenses of the national forest force).....		Total.....	153.74
			31,163.97

## BUREAU OF CHEMISTRY.

Classification of expenditures for the fiscal year ended June 30, 1916.

	Project.	Salaries.				Travel, station, and field expenses.	Equipment.		
		Statutory.	Lump fund.		Total.		Apparatus, instruments, laboratory.	Furniture.	Miscella- neous.
			In Wash- ington.	Out of Washington.					
1	Administration.....	\$47,624.38	\$24,305.91	-----	\$71,930.29	\$1,653.72	\$8.89	\$708.13	\$611.76
2	Investigations in agricultural chemistry.....	4,479.01	29,929.89	\$1,000.00	35,408.90	1,622.40	1,126.33	11.86	704.73
3	Collaboration with other departments.....	-----	8,510.00	1,991.25	10,501.25	2,180.71	86.10	22.60	-----
4	Testing export food products.....	-----	-----	3,958.83	3,958.83	-----	107.00	-----	48.88
5	Poultry and egg investigations..	4,331.83	-----	26,279.96	30,611.79	5,052.25	931.17	128.10	149.67
6	Fish investigations.....	-----	-----	6,697.11	6,697.11	3,965.43	538.60	5.00	96.54
7	Oyster and other shellfish inves- tigations.....	-----	2,877.67	610.00	3,487.67	734.81	91.60	-----	-----
8	Biological investigations of food and drug products.....	62.50	7,410.00	1,200.00	8,672.50	144.76	55.00	23.45	14.82
9	Citrus by-products investiga- tions.....	827.50	-----	6,260.00	7,087.50	171.33	67.30	-----	48.61
10	Naval-stores investigations.....	-----	3,000.00	-----	3,000.00	1,013.73	8.48	-----	17.00
11	Enforcement of the food and drugs act.....	231,034.74	229,066.38	181,255.95	641,357.07	74,690.17	8,493.72	3,825.78	3,506.99
	Total.....	288,359.96	305,099.85	229,253.10	822,712.91	91,229.31	11,514.19	4,724.92	5,199.00

## SUPPLY DEPOT, OGDEN, UTAH.

Total expenditures..... \$118,044.14  
 Outstanding liabilities, Aug. 31..... 9,958.06

Total allotment..... 128,002.20

Purchase and distribution of supplies for  
 the whole service outside of the Wash-  
 ington office..... 128,002.20

## PROPERTY AUDITOR, OGDEN, UTAH.

Total expenditures..... \$8,907.22  
 Record supervision and inspection of all  
 property of the Forest Service.

## EXPERIMENT STATIONS.

Total expenditures..... \$54,568.12  
 Outstanding liabilities, Aug. 31..... .80

Total allotment..... 54,568.92

Distributed among the several stations as  
 follows:

## Experiment stations:

District 1, Priest River, Priest River,  
 Idaho..... 9,346.31  
 District 2, Fremont, Manitou, Colo... 5,210.84  
 District 2, Wagon Wheel Gap, Wagon  
 Wheel Gap, Colo..... 2,599.75  
 District 3, Fort Valley, Flagstaff, Ariz. 9,971.94  
 District 4, Utah, Ephraim, Utah..... 10,003.92  
 District 5, Converse, Seven Oaks, Red-  
 lands, Cal..... 2,491.80  
 District 5, Feather River, Quincy, Cal. 11,032.61  
 District 6, Wind River, Carson, Wash. 3,911.75

Total..... 54,568.92

Total, Forest Service, exclusive of  
 national forests..... 1,804,770.58

## THE NATIONAL FORESTS.

[154 national forests, comprising a net area of 155,420,280  
 acres.]

Total expenditures..... \$4,101,251.64  
 Outstanding liabilities, Aug. 31..... 30,903.42

Total allotment..... 4,132,155.06

Distributed among the several subactiv-  
 ities as follows:

Operation..... 3,191,639.74  
 Silviculture..... 437,476.30  
 Lands..... 258,901.34  
 Grazing..... 230,993.14  
 Research..... 13,144.54

Total..... 4,132,155.06

## RECEIPTS FROM NATIONAL FOREST RESOURCES.

Timber sale..... \$1,367,041.12  
 Timber settlement..... 2,298.69  
 Timber trespass..... 37,781.93  
 Grazing..... 1,202,404.61  
 Grazing trespass..... 7,809.98  
 Fire trespass..... 5,470.77  
 Occupancy trespass..... 1,334.33  
 Special use..... 83,900.97  
 Water power..... 101,096.32  
 Turpentine sale..... 14,345.45  
 Turpentine trespass..... 56.54

Total..... 2,823,540.71

## BUREAU OF CHEMISTRY.

*Classification of expenditures for the fiscal year ended June 30, 1916.*

Stationery.	Rent.	Telegraph, telephone, and postage.	Freight, express, and drayage.	Furnishing of heat, light, power, electricity.	Forage purchased in bulk.	Fuel.	Specified items not otherwise classified.	Miscellane- ous supplies, services, etc.	Total.	
\$958.98		\$525.50	\$75.00					\$2,712.73	\$79,185.00	1
159.29		42.12	961.73					4,488.63	44,525.99	2
72.94		95.43	149.84					138.72	13,247.59	3
.70								78.20	4,193.61	4
9.97	\$3,240.00	211.70	220.09	\$250.16				1,829.24	42,634.14	5
2.87	987.50	56.13	252.67					849.63	13,451.48	6
		3.57	61.67	9.08				295.10	4,683.50	7
			13.84					760.20	9,684.57	8
9.50	960.00	20.28	69.27	156.64				603.36	9,193.79	9
		13.80	100.46					478.08	4,631.55	10
2,178.83	13,730.33	6,370.61	6,465.50	1,869.46				50,977.87	813,466.33	11
3,393.08	18,917.83	7,339.14	8,370.07	2,285.34				63,211.76	1,038,897.55	



## PROJECT STATEMENTS.

## \* ADMINISTRATION.

Total expenditures as above.....	\$79,185.00
Outstanding liabilities, Aug. 31 (estimated)...	912.00

Total allotment.....	80,097.00
----------------------	-----------

General administration of the research, regulatory, and business affairs of the bureau, including the clerical work connected with the keeping of accounts, filing of correspondence, and the editorial work on manuscripts for publication..... 80,097.00

## INVESTIGATIONS IN AGRICULTURAL CHEMISTRY.

Total expenditures as above.....	\$44,525.99
Outstanding liabilities, Aug. 31 (estimated)...	2,094.00
Unexpended balance (estimated).....	259.02

Total allotment.....	46,879.01
----------------------	-----------

Studies to determine the effect of environment on the composition of crops, to find new uses for waste agricultural products, to learn methods for preserving perishable farm products from seasons of oversupply to times of scarcity, to study nutritive value of feeds, and to apply the science of chemistry to the solution of problems in the production, distribution, and utilization of farm products. Distributed among the several subactivities as follows:

Carbohydrate investigations.....	2,096.86
Cotton-plant investigations.....	647.75
Fruit and vegetable utilization investigations.....	12,164.03
Insecticide and fungicide investigations....	2,351.31
Leather and paper investigations.....	14,067.42
Nitrogen tests and investigations.....	828.41
Plant chemical investigations.....	14,464.21

Total.....	46,619.99
------------	-----------

## COLLABORATION WITH OTHER DEPARTMENTS.

Total expenditures as above.....	\$13,247.59
Outstanding liabilities, Aug. 31 (estimated)...	718.93
Unexpended balance (estimated).....	33.48

Total allotment.....	14,000.00
----------------------	-----------

Distributed among the several subactivities as follows:

Miscellaneous tests for other departments: This project has for its object the rendering of assistance to the Post Office Department in preventing the use of the mails for fraudulent purposes, with special reference to drugs and medicines; the testing of contract supplies; work in the preparation of specifications for certain products, including foods and drugs, for which the Bureau of Standards is not equipped; assisting the

Treasury Department in classifying various products under the tariff act, and making chemical analyses for other departments upon request..... \$5,980.00

Grain-dust explosions: Study of the physical and chemical properties of grain and of the cereal dust which occurs in the thrashing, storing, handling, and milling of wheat and other cereals, in order to determine the cause of explosions in thrashers, mills, and elevators, and to secure knowledge that will lead to the prevention of such explosions.. 7,986.52

Total.....	13,966.52
------------	-----------

## TESTING EXPORT FOOD PRODUCTS.

Total expenditures as above.....	\$4,193.61
Outstanding liabilities, Aug. 31 (estimated)...	42.90
Unexpended balance (estimated).....	43.49

Total allotment.....	4,280.00
----------------------	----------

Under this project samples of food products for export are tested upon request of exporters, in order to determine whether the goods will meet the requirements of the country to which consigned, and the methods of analysis employed in foreign countries are studied..... 4,236.51

## POULTRY AND EGG INVESTIGATIONS.

Total expenditures as above.....	\$42,634.14
Outstanding liabilities, Aug. 31 (estimated)...	1,507.20
Unexpended balance (estimated).....	190.49

Total allotment.....	44,331.83
----------------------	-----------

Dissemination of information to shippers, carriers, etc., relative to improved methods of handling poultry and eggs; study of the breakage of eggs in transit; investigation of the preparation of frozen and dried eggs; poultry fleshing studies; and research work to discover fundamental scientific facts bearing on the preservation of the quality of poultry and eggs and the prevention of decay..... 44,141.34

## FISH INVESTIGATIONS.

Total expenditures as above.....	\$13,451.48
Outstanding liabilities, Aug. 31 (estimated)...	438.14
Unexpended balance (estimated).....	110.38

Total allotment.....	14,000.00
----------------------	-----------

Study of the methods of transporting and handling fish; study of the cold storage of fish and the utilization of by-products of the fish industry..... 13,889.62

## OYSTER AND OTHER SHELLFISH INVESTIGATIONS.

Total expenditures as above.....	\$4, 683. 50
Outstanding liabilities, Aug. 31 (estimated).....	272. 05
Unexpended balance (estimated).....	44. 45

Total allotment..... 5, 000. 00

Investigations regarding the sanitary inspection of shellfish areas and the handling and shipping of shellfish; study of the conservation of the by-products of the oyster industry; investigation of the sanitary character of water in relation to the sanitary condition of shellfish..... 4, 955. 55

## BIOLOGICAL INVESTIGATIONS OF FOOD AND DRUG PRODUCTS.

Total expenditures as above.....	\$9, 684. 57
Outstanding liabilities, Aug. 31 (estimated).....	127. 19
Unexpended balance (estimated).....	250. 74

Total allotment..... 10, 062. 50

Investigation of the biological effects of food and drug products upon health; determination of the chemical composition of proteins as a basis for ascertaining their food value; study of nitrogen distribution in various cereals and other feeding stuffs; study of the utilization of hydrogenated oils..... 9, 811. 76

## CITRUS BY-PRODUCTS INVESTIGATIONS.

Total expenditures as above.....	\$9, 193. 79
Outstanding liabilities, Aug. 31 (estimated).....	1, 489. 46
Unexpended balance (estimated).....	144. 25

Total allotment..... 10, 827. 50

Development of commercial methods for the utilization of cull citrus fruits, especially for the purpose of increasing the quantity and quality of the yield of essential oils from the peel and of juice from the fruit; and study of methods for the extraction of other by-products from citrus fruits. 10, 683. 25

## NAVAL-STORES INVESTIGATIONS.

Total expenditures as above.....	\$4, 631. 55
Outstanding liabilities, Aug. 31 (estimated).....	312. 30
Unexpended balance (estimated).....	56. 15

Total allotment..... 5, 000. 00

The preparation of definite and permanent type samples as a basis for trading and to insure fair, uniform, and simple grading of naval stores..... 4, 943. 85

## ENFORCEMENT OF THE FOOD AND DRUGS ACT.

Total expenditures as above.....	\$813, 466. 33
Outstanding liabilities, Aug. 31 (estimated).....	19, 560. 56
Unexpended balance (estimated).....	696. 23

Total allotment..... 833, 723. 12

For carrying out the provisions of the food and drugs act of June 30, 1906, making necessary investigations, inspections, analyses of food and drug products. Distributed among the several subactivities as follows:

General administrative work in connection with the enforcement of the food and drugs act, including the preparation of evidence for presentation in cases, fees paid expert witnesses, etc.....	\$54, 695. 42
State cooperative food and drug control.....	12, 834. 15
Office of medical experts (Sherley amendment cases).....	7, 419. 31
Animal physiological chemical investigations.....	9, 485. 03
Carbohydrate tests and investigations.....	24, 671. 92
Citrus-fruit investigations.....	8, 657. 48
Color certification and investigations.....	9, 628. 78
Dairy tests and investigations.....	9, 530. 21
Drug tests and investigations.....	29, 557. 46
Flour-bleaching investigations.....	6, 281. 12
Food control.....	26, 796. 17
Food investigations.....	14, 685. 53
Microchemical tests and investigations.....	12, 349. 50
Miscellaneous tests and investigations.....	17, 908. 75
Net-weight investigations.....	4, 449. 93
Nitrogen tests and investigations.....	3, 896. 26
Organic investigations.....	10, 114. 76
Pharmacognosy investigations.....	10, 030. 90
Pharmacological investigations.....	12, 229. 18
Physiochemical investigations.....	5, 535. 55
Turpentine tests and investigations.....	2, 191. 69
Water tests and investigations.....	13, 971. 23
Microbiological tests and investigations.....	28, 943. 96
Special investigations.....	6, 940. 45
Eastern district—	
Washington laboratory (including district headquarters).....	42, 376. 69
Boston laboratory.....	20, 694. 75
Buffalo laboratory.....	9, 673. 07
New York laboratory.....	86, 499. 05
Philadelphia laboratory.....	9, 840. 96
Porto Rico laboratory.....	3, 972. 21
Savannah laboratory.....	9, 026. 40
Inspection, eastern district.....	53, 612. 93
Travel to court, eastern district.....	819. 15
Central district—	
Chicago laboratory (including district headquarters).....	65, 790. 37
Cincinnati laboratory.....	12, 037. 00
New Orleans laboratory.....	8, 908. 48
St. Louis laboratory.....	8, 445. 28
Minneapolis laboratory.....	10, 060. 79
Inspection, central district.....	60, 082. 18
Travel to court, central district.....	366. 95
Western district—	
San Francisco laboratory (including district headquarters).....	35, 151. 85
Denver laboratory.....	17, 728. 31
Honolulu laboratory.....	3, 530. 09
Seattle laboratory.....	11, 126. 14
Inspection, western district.....	19, 990. 72
Travel to court, western district.....	488. 78
Total.....	833, 026. 89



## BUREAU OF SOILS.

*Classification of expenditures for the fiscal year ended June 30, 1916.*

	Project.	Salaries.				Travel, station, and field expenses.	Equipment.		
		Statutory.	Lump fund.		Total.		Apparatus, instruments, laboratory.	Furniture.	Miscella- neous.
			In Wash- ington.	Out of Washington.					
1	Administration.....	\$35,665.83	\$301.00		\$35,966.83		\$21.00	\$274.66	\$13.65
2	Soil chemical investigations.....	420.00	18,915.38	\$955.00	20,290.38	\$85.59	813.94	124.63	
3	Soil physical investigations.....	420.00	11,950.84	150.50	12,521.34		1,243.56	162.05	23.50
4	Investigations of fertilizer re- sources.....	420.00	20,317.84	1,506.00	22,243.84	1,456.40	4,355.39	97.30	119.96
5	Soil-survey investigations.....	25,047.80	8,770.84	84,050.65	117,869.29	68,439.12	843.79	12.82	10.50
6	Classification of agricultural lands in forest reserves.....		2,655.83	7,737.00	10,392.83	5,531.40			
	Total.....	61,973.63	62,911.73	94,399.15	219,284.51	75,512.51	7,277.68	671.46	167.61

## PROJECT STATEMENTS.

## ADMINISTRATION.

Total expenditures as above.....	\$38,702.46
Outstanding liabilities, Aug. 31 (estimated)..<	80.98
Unexpended balance (estimated).....	528.77

Total allotment..... 39,312.21

General direction and supervision of the various investigational activities of the bureau, including the offices of chief of bureau and chief clerk, and the accounts, editorial, supply, and files and records sections..... 38,783.44

## SOIL CHEMICAL INVESTIGATIONS.

Total expenditures as above.....	\$22,476.89
Outstanding liabilities, Aug. 31 (estimated)..<	158.10
Unexpended balance (estimated).....	135.01

Total allotment..... 22,770.00

Distributed among the several subactivities as follows:

Supervision: Planning, direction, and supervision of the routine and investigational work in soil chemistry; conduct of correspondence and other clerical work relative thereto..... 2,953.76

Mineral nature of agriculturally important American soils: Determination of the predominating minerals in important soil types, with a view to establish the origin, process of formation, and relations of these types..... 994.06

Routine microscopic work: Determination of the identity of rocks and other soil-forming and fertilizer-producing materials submitted by the various divisions of this bureau and other branches of the department..... 719.04

Absorption by soils: Determination of the effect on soils of the addition of soluble substances; and determination of the fixation of fertilizer salts by soils, the physicochemical effects on the soil, and the relation of soluble salts to change in tilth..... 117.93

Lime-phosphate investigations: Investigation of the nature of the lime phosphates occurring naturally in soils and produced by the application of phosphatic fertilizers..... 205.03

Inorganic composition of soils: A systematic inquiry, in cooperation with the soil survey, into the chemical composition of important agricultural soils of the United States..... 3,553.00

## Ash composition of important crop plants:

Determination of the presence in plant ash of chemical elements (especially the rarer elements) found in the soils on which the plants are grown..... \$4,020.80

Hydrolytic decomposition of soil-forming minerals: Study of the action of water and such substances as may exist in the soil solution upon the decomposition and degradation of soil minerals and the possible synthesis of new mineral species..... 1,659.95

Routine chemical laboratory: This project covers the chemical analysis of soils, waters, and similar materials for this bureau and other bureaus of the department..... 6,194.44

Methods for determining nitrogen in soils and fertilizers: Study of the relative values of existing analytical methods or new ones to be formulated, with special reference to the valuation of city wastes..... 99.04

Study of analytical data relative to soil productivity: A critical comparison of existing analytical data for soils of known productivity..... 167.50

Liming of soils: Study of the effects of liming and determination of a proper basis for the practice of liming soils..... 1,950.44

Total..... 22,634.99

## SOIL PHYSICAL INVESTIGATIONS.

Total expenditures as above.....	\$15,004.22
Outstanding liabilities, Aug. 31 (estimated)..<	531.99
Unexpended balance (estimated).....	148.79

Total allotment..... 15,685.00

Distributed among the several subactivities as follows:

Supervision: Planning, direction, and supervision of the routine and investigational work in soil physics; correspondence and other clerical details..... 3,491.78

Designing, construction, and standardization of instruments: Consists of routine work in the repair of instruments and apparatus, and the designing and construction of special pieces of apparatus for the various divisions of the bureau..... 1,572.57

Physical examination of soils: Quantitative determination of the mechanical separates for an expression of the textural characteristics of soils; investigation of the physical

## BUREAU OF SOILS.

*Classification of expenditures for the fiscal year ended June 30, 1916.*

Stationery.	Rent.	Telegraph, telephone, and postage.	Freight, express, and drayage.	Furnishing of heat, light, power, electricity.	Forage purchased in bulk.	Fuel.	Specified items not otherwise classified.	Miscellaneous supplies, services, etc.	Total.
\$1,291.36		\$138.75	\$262.43					\$733.78	\$38,702.46
6.56		.16	7.37					1,148.26	22,476.89
31.85			2.87					1,019.05	15,004.22
3.90		3.44	131.45	\$752.90				4,710.54	33,875.12
818.44		41.01	197.68					1,671.64	189,904.29
8.69		4.91	3.39					8.58	15,949.80
2,160.80		188.27	605.19	752.90				9,291.85	315,912.78

composition of soils; and determination of the relation of the different components to the physical condition of the soil..... \$3,190.56

Soil pressures: Investigation of the magnitude of the stresses in the soil induced by changes in moisture content or by the application of loads on the soil, and observation of relative movements of large and small particles under alternate wetting and drying..... 2,507.48

Soil erosion: Investigation of the causes for and control of erosion in soils of different types and under various climatic conditions..... 613.51

Movement of the soil solution: Study of the movement and distribution of moisture in the soil and of methods for determining the critical moisture content; and devising an instrument that can be used in the field for determining the moisture content of soils.. 1,414.82

Absorption by soils: Study of the absorption by soils of water vapor, gases, and various soluble salts and of their effect on the physical condition of the soil..... 1,254.76

Soil temperatures: Investigation of heat conductance of soils and of the relation of temperature and solar radiation to soil conditions..... 160.66

Soil aeration: Study of the composition of soil atmosphere and its movements as influenced by barometric pressure, temperature, texture, and tillage..... 1,330.07

Total..... 15,536.21

## INVESTIGATION OF FERTILIZER RESOURCES.

Total expenditures as above..... \$33,875.12

Outstanding liabilities, Aug. 31 (estimated).. 2,342.79

Unexpended balance (estimated)..... 702.09

Total allotment..... 36,920.00

Distributed among the several subactivities as follows:

Supervision: Planning, direction, and supervision of investigations of fertilizer resources of the United States; correspondence and other clerical details..... 4,149.07

Extraction of potassium salts from kelp: Investigation of the practicability and economic value of various methods of extracting potassium salts from the giant kelps of the Pacific coast..... 363.96

Effect of harvesting and other factors on the growth of kelp: Determination of the effect of different methods of harvesting on the growth of kelp; study of the influence of fresh water and of the effect of storms on the kelp beds..... 644.14

Production of potash from feldspar and other mineral sources: Determination of commercially possible methods for utilizing feldspar, alunite, natural brines, etc., as sources of potash for fertilizer production..... \$724.91

Fertilizer value of city and trade wastes: Determination of the amount and value of city and trade wastes as sources of commercial fertilizer material, including an inspection of various municipal disposal plants, analyses of samples, and a study of practical methods of preparing garbage and other tankage..... 6,327.02

Fixation of atmospheric nitrogen: Studies of the use of phosphate rock and of feldspar in the fixation of atmospheric nitrogen by means of electrical energy, with a view to obtain in one operation two or more of the fertilizing elements in soluble form..... 10,543.91

Extraction of phosphoric acid from natural phosphates: Study of the volatilization of phosphoric acid from phosphate rock by electrical and other forms of heat energy; comparison of the efficiency of methods devised with the sulphuric-acid method or improvements in the latter method, and investigation of the most economical methods of separating phosphoric acid from solution..... 8,868.89

Phosphate industry of the United States: Investigation of the sources, quantity, and production of phosphate rock, its manipulation for the fertilizer industry, the relative merits of the products obtained by the several manipulations, and other factors necessary to determine the cost to the farmer and to inform him concerning changing conditions..... 4,209.63

Concentration of low-grade phosphates: Determination of mechanical and chemical methods of separating phosphoric acid from impurities with which it is associated in the waste material resulting from mining operations..... 90.00

Phosphate deposits in Virginia: Field inspection and laboratory examinations to determine the commercial importance of reported phosphate deposits in Albemarle, Nelson, and Roanoke Counties, Va..... 29.33

Production of raw materials in the United States for fertilizer purposes: The purpose of this project is to obtain accurate and authentic data, by correspondence with producers and by occasional visits to mines and factories, regarding available or partially available fertilizer resources..... 267.05

Total..... 36,217.91



SOIL-SURVEY INVESTIGATIONS.		
Total expenditures as above.....	\$189,904.29	
Outstanding liabilities, Aug. 31 (estimated)...	3,479.42	
Unexpended balance (estimated).....	214.08	
Total allotment.....	193,597.79	
Distributed among the several subactivities as follows:		
Supervision: General direction and supervision of the soil-survey investigations, including office correspondence, compilation of field reports, assignments of the field force, and all other matters relating to the administration of the work.....	13,255.32	
Soil surveys: These activities comprise the surveying, mapping, and classifying of the soils of important areas in different parts of the country; the preparation of reports containing descriptive matter relating to the soils, their character, origin, and value for crops, and to the agricultural conditions found in each area surveyed; the preparation of maps showing the distribution of the soils; and the dissemination of information relating to the use of soils. The purpose is to acquire a knowledge of the soils of the United States and make it available for use by other bureaus and departments, agricultural colleges, experiment stations, and others engaged in the development of agriculture. The following areas were surveyed in whole or in part during the fiscal year 1916, aggregating 47,005 square miles:		
Alabama: Barbour County, <sup>1</sup> \$194.53; Lowndes County, <sup>2</sup> \$3,395.96; Monroe County, <sup>2</sup> \$3,141.06; Fickens County, \$946.73; Washington County, <sup>1</sup> \$458.25; Wilcox County, <sup>1</sup> \$2,630.51.....	10,767.04	
Arkansas: Craighead County, \$2,682.30; Faulkner County, <sup>2</sup> \$311.64; Hempstead County, \$2,796.88.....	5,790.82	
California: Healdsburg area, <sup>1</sup> \$1,731.11; Los Angeles area, <sup>2</sup> \$1,317.90; reconnoissance of San Joaquin Valley, <sup>2</sup> \$3,129.75; Anaheim area, <sup>2</sup> \$3,278.34; Santa Maria Valley, <sup>2</sup> \$221.16; central-southern reconnoissance area, <sup>2</sup> \$94.....	9,772.26	
Colorado: Grand Valley area <sup>1</sup> .....	141.95	
Delaware: New Castle County <sup>1</sup> .....	822.58	
Florida: Hillsborough County.....	7,172.20	
Georgia: Brooks County, \$2,601.95; Crisp County, \$1,096.56; Jasper County, <sup>2</sup> \$103.73;		
Meriwether County, \$1,887.92; Richmond County, \$2,316.03.....		\$8,006.20
Idaho: Latah County, <sup>1</sup> \$193.27; Minidoka reclamation project, \$116.55.....		309.82
Indiana: Benton County, <sup>2</sup> \$230.35; Grant County, \$2,495.96; Forter County, <sup>2</sup> \$110.34; Starke County, \$238.52; Wells County, <sup>1</sup> \$688.94; White County, <sup>1</sup> \$656.59.....		4,420.70
Iowa: Clay County, <sup>2</sup> \$52.82; Clinton County, <sup>1</sup> \$1,308.63; Mitchell County, <sup>2</sup> \$294; Ringgold County, <sup>2</sup> \$185.65; Scott County, \$1,494.02; Sioux County, <sup>1</sup> \$724.34; Van Buren County, <sup>1</sup> \$1,190.78.....		5,250.24
Kansas: Cowley County <sup>1</sup> .....		2,394.16
Kentucky: Jessamine County, <sup>1</sup> \$537.80; Shelby County, <sup>2</sup> \$75.05.....		612.85
Louisiana: Rapides Parish.....		2,971.64
Maine: Aroostook County, <sup>2</sup> \$564.36; Cumberland County, <sup>1</sup> \$2,598.05; special study of the soils of the potato districts in Aroostook County, with particular reference to the potato powdery scab, \$283.51.....		3,445.92
Michigan: Calhoun County <sup>1</sup> .....		2,336.89
Minnesota: Anoka County <sup>2</sup> .....		477.00
Mississippi: Hinds County, \$2,934.14; Lee County, \$1,305.61; Newton County, <sup>2</sup> \$324.51.....		4,564.26
Missouri: Barry County, <sup>2</sup> \$594.34; Buchanan County, <sup>1</sup> \$772.81; Calloway County, <sup>2</sup> \$138.05; Newton County, <sup>1</sup> \$974.27; Ripley County, <sup>1</sup> \$1,100.25; Texas County, <sup>2</sup> \$380.06.....		3,959.78
Nebraska: Box Butte County, <sup>2</sup> \$450.45; Dawes County, <sup>1</sup> \$1,684.58; Dodge County, <sup>2</sup> \$519.33; Filmore County, <sup>2</sup> \$404.39; Hall County, <sup>2</sup> \$414.19; Polk County, <sup>1</sup> \$912.84; Richardson County, <sup>1</sup> \$834.61; Washington County, <sup>1</sup> \$730.33.....		5,950.72
New Jersey: Belvidere area, <sup>2</sup> \$233.63; Camden area, <sup>1</sup> \$679.95; Millville area, <sup>2</sup> \$188.99.....		1,102.57
New York: Cortland County, \$1,026.34; Schoharie County, <sup>1</sup> \$617.69.....		1,644.03
North Carolina: Allegheny County, <sup>1</sup> \$1,025.88; Anson County, <sup>1</sup> \$1,435.85; Cleveland County, <sup>2</sup> \$41.50; Davidson County, <sup>1</sup> \$1,559.80; Halifax County, <sup>2</sup> \$1,421.45; Hartnett County, \$1,346.54; Hertford County, \$1,017.25; Stanley County, <sup>2</sup> \$42.90.....		7,891.17
North Dakota: Bottineau County <sup>1</sup> .....		1,925.08
Ohio: Geauga County, <sup>1</sup> \$852.79; Hamilton County, <sup>1</sup> \$643.63; Lucas County, \$499.96; Marion County, <sup>2</sup> \$254.57; Mahoning County, <sup>2</sup> \$418.22; Sandusky County, <sup>2</sup> \$171.50....		2,840.67
Oklahoma: Kay County, <sup>1</sup> \$2,363.36; Payne County, <sup>2</sup> \$363.50.....		2,726.86

<sup>1</sup> Surveyed in part during fiscal year 1915.<sup>2</sup> To be completed during fiscal year 1917.

Pennsylvania: Blair County, <sup>1</sup> \$1,145.52; Cambria County, <sup>1</sup> \$1,497.34; Clearfield County, <sup>2</sup> \$602.97.....	\$3, 245. 83	Advisory service: Consists of the identifica- tion of miscellaneous soil samples and the giving of advice, through correspondence or otherwise, regarding the use of soils.....	\$2, 500. 00
South Carolina: Berkeley County, \$5,225.82; Richland County, \$1,086.86.....	6, 312. 68	Miscellaneous supplies: Purchase of field equipment, consisting of plane tables, com- passes, augers, alidades, and other instru- ments, drafting and photographic supplies, and other materials required for field and office work.....	6, 429. 45
Tennessee: Shelby County.....	1, 864. 46	Total.....	193, 383. 71
Texas: Bell County, <sup>2</sup> \$2,776.18; Eastland County, \$4,499.70; San Saba County, \$4,488.14.....	11, 764. 02	CLASSIFICATION OF AGRICULTURAL LANDS IN FOREST RESERVES.	
Vermont: Windsor County <sup>1</sup> .....	2, 422. 11	Total expenditures as above.....	\$15, 949. 80
Virginia: Accomac County, <sup>2</sup> \$192.36; Alex- andria and Fairfax Counties, <sup>1</sup> \$1,937.70; Pittsylvania County, <sup>2</sup> \$246.25; special field studies of the relation of different soil types to crop production in the trucking regions, \$2,380.43.....	4, 756. 74	Outstanding liabilities, Aug. 31 (estimated).. Unexpended balance (estimated).....	88. 13 3, 612. 07
Washington: Benton County <sup>2</sup> .....	2, 336. 05	Total allotment.....	19, 650. 00
West Virginia: Gilmer and Lewis Counties, <sup>1</sup> \$773.30; Jefferson, Morgan, and Berkeley Counties, <sup>2</sup> \$118.44.....	891. 74	The work under this project consists of as- sisting the Forest Service in the classifi- cation and segregation of agricultural lands in the several forest reserves with a view to determine their value for agricul- tural purposes, so as to enable the Forest Service to indicate what lands may be opened for settlement.	
Wisconsin: Columbia County, \$11.35; Door County, <sup>2</sup> \$493.40; Jefferson County, \$8.04; Milwaukee County, <sup>2</sup> \$56.62; Portage Coun- ty, <sup>2</sup> \$1,402.74; Rock County, <sup>2</sup> \$239.91; southern part of north-central reconnois- sance, <sup>1</sup> \$4,178.47; Waupaca County, <sup>2</sup> \$132.18; Wood County, <sup>1</sup> \$1,241.30.....	7, 764. 01	Supervision: General direction and super- vision of the land-classification activities, including inspection, map drafting, steno- graphic services, supplies, etc.....	4, 189. 51
Inspection, correlation, and supervision of field work: Inspection of soil-survey field work to secure uniformity in methods and results; examination and review of field reports; preparation of memoranda for soil correlation and keeping of records pertain- ing thereto; and correlating the soils of the various areas surveyed, so as to insure uni- formity in the classification of the soils of the United States.....	15, 517. 77	Forest reserves in—	
Map drafting: Preparation of suitable base maps for the use of soil-survey field parties; securing data regarding official boundaries, railroad alignments, and other miscella- neous information required by field parties; adjusting, drawing, and coloring soil maps to be used as a copy for lithographic repro- duction; measuring the areas of different soil types, etc.....	14, 196. 13	Alaska.....	95. 85
Photographic reproduction of base maps: The photographic enlargement or reproduction of base maps to a scale suitable for use of soil-survey field parties.....	1, 204. 99	Arizona.....	1, 356. 84
Use of soils: Study of the distribution, rela- tionship, and characteristics of the import- ant soil series and soil types of the country, and of the adaptability of soils to certain crops.....	1, 625. 00	Arkansas.....	497. 00
		California.....	2, 811. 33
		Colorado.....	260. 24
		Georgia.....	641. 66
		Idaho.....	1, 718. 85
		Montana.....	1, 992. 90
		New Mexico.....	238. 74
		Oregon.....	18. 65
		South Dakota.....	67. 62
		Texas.....	843. 33
		Utah.....	694. 51
		Washington.....	128. 10
		Wyoming.....	482. 80
		Total.....	16, 037. 93

<sup>1</sup> Surveyed in part during fiscal year 1915.<sup>2</sup> To be completed during fiscal year 1917.



## BUREAU OF ENTOMOLOGY.

Classification of expenditures for the fiscal year ended June 30, 1916.

	Project.	Salaries.				Travel, station, and field expenses.	Equipment.		
		Statutory.	Lump fund.		Total.		Apparatus, instruments, laboratory.	Furniture.	Miscella- neous.
			In Wash- ington.	Out of Washington.					
1	Administration.....	\$34,719.49	\$1,354.50	-----	\$36,073.99	\$1,110.01	-----	\$274.52	-----
2	Deciduous-fruit insect investi- gations.	2,788.89	18,703.28	\$23,891.25	45,383.42	5,235.30	\$623.44	245.32	\$553.91
3	Cereal and forage insect investi- gations.	2,941.67	6,112.17	78,625.26	87,679.10	15,610.87	404.77	663.84	88.35
4	Southern field-crop insect in- vestigations.	3,145.01	12,278.51	29,215.55	44,639.07	9,230.23	310.80	535.91	641.90
5	Forest and shade-tree insect investigations.	3,656.67	20,458.50	26,142.17	50,257.34	4,877.52	-----	105.15	23.32
6	Truck-crop and stored-product insect investigations.	3,067.22	15,384.10	18,429.29	36,880.61	2,114.21	536.74	559.55	103.85
7	Bee-culture investigations.....	1,216.00	11,940.09	375.00	13,531.09	880.13	98.30	83.30	88.35
8	Tropical and subtropical fruit insect investigations.	1,400.00	4,496.94	9,390.00	15,286.94	1,851.22	116.81	210.72	270.45
9	Investigation of the Mediter- ranean fruit fly.	-----	2,833.34	3,616.66	6,450.00	6,495.15	-----	65.19	266.50
10	Miscellaneous insect investiga- tions.	4,760.00	24,427.77	16,050.06	45,237.83	4,797.68	152.91	148.32	125.58
11	Moth investigations.....	11,429.66	1,890.00	67,851.88	81,171.54	186,707.97	792.03	611.52	12,904.59
	Total.....	69,124.61	119,879.20	273,587.12	462,590.93	238,910.29	3,035.80	3,503.34	15,066.80

## PROJECT STATEMENTS.

## ADMINISTRATION.

Total expenditures as above..... \$38,701.95

This covers the general administration, supervision, and direction of the investigations and business activities of the bureau, under the personal supervision of the chief of bureau.

## DECIDUOUS-FRUIT INSECT INVESTIGATIONS.

Total expenditures as above..... \$59,679.08

Outstanding liabilities, Aug. 31 (estimated). 256.92

Unexpended balance (estimated)..... 864.00

Total allotment..... 60,800.00

Distributed among the several subactivities as follows:

Supervision: General supervision of investigational and clerical work in connection with deciduous-fruit insects..... 7,530.44

Apple insects: Studies of the life history and habits of and remedies for the apple-tree borer, aphids, and other insects injurious to the apple, and development of methods for their control; also study of variations necessary in the spraying schedule to control the codling moth..... 17,870.03

Peach insects: Work on the biology of insects injurious to the peach, including thrips, peach-tree borer, etc., and determination of methods of control..... 4,481.56

Grape insects: Investigation of the life history and habits of the grape berry moth, grape Phylloxera, and other important grape insects in the United States, and development and application of remedies... 7,902.50

Nut insects: General inquiry into the insect enemies of the pecan, chestnut, and other native cultivated nuts, and determination of appropriate remedies..... 4,144.90

## Orchard insecticides and spraying machinery:

Testing of proprietary insecticides; determination of the comparative merits of various types of spraying machinery in general use and of accessories used in spraying..... \$5,595.48

Cranberry and small-fruit insects: Investigation of the important insects affecting the cranberry and other small fruits, and determination of appropriate remedial measures for same; study of methods of insect control now in vogue, with a view to develop improvements where possible..... 2,837.63

Deciduous-fruit insect control by natural agencies: Determination of the importance of hymenopterous parasites and predatory insects in the control of various species of insects injurious to deciduous-fruit orchards, vineyards, etc., and development of methods for their practical propagation and dissemination..... 3,300.40

Orchard insect survey: Collection of data regarding a large number of insect pests of orchards, vineyards, etc., not normally of first-class importance as pests but which in the aggregate do a large amount of injury and may become seriously destructive at any time, so as to be prepared to promptly suggest remedies in case of serious insect outbreaks and minimize the loss from such causes..... 4,210.35

Deciduous-fruit nursery insect investigations: Investigation of the various insects affecting nursery stock and development of remedies which may be effectively applied under nursery conditions; investigation of the efficiency of fumigation methods now employed by nurserymen; effecting improvements in methods of disinfecting nursery stock..... 2,062.71

Total..... 59,936.00

## BUREAU OF ENTOMOLOGY.

*Classification of expenditures for the fiscal year ended June 30, 1916.*

Stationery.	Rent.	Telegraph, telephone, and postage.	Freight, express, and drayage.	Furnishing of heat, light, power, electricity.	Forage purchased in bulk.	Fuel.	Specified items not otherwise classified.	Miscellaneous supplies, services, etc.	Total.	
\$754.30		\$4.55						\$484.58	\$38,701.95	1
199.78	\$2,335.11	232.96	\$414.71	\$74.92		\$103.12		4,277.09	59,679.08	2
248.83	4,376.97	723.91	644.05	256.39		292.12		5,616.13	116,605.33	3
304.33	1,117.50	167.20	317.33	233.49		113.59		3,896.89	61,508.24	4
262.28	830.00	182.64	73.52	47.92		118.01		1,427.92	58,205.62	5
222.86	526.50	91.43	80.74	42.18				2,639.88	43,798.55	6
95.76	649.80	40.31	19.99	50.76		127.80		474.10	16,139.69	7
68.27	680.00	91.09	163.20	70.95				1,723.70	20,533.35	8
60.00	435.00	104.14	127.20	10.00				1,245.93	15,259.11	9
15.57	1,248.00	145.60	180.05	114.99		6.00		2,566.95	54,739.48	10
253.22	3,113.07	1,203.27	\$82.03	395.01		368.05		24,282.94	312,685.24	11
2,485.20	15,311.95	2,987.10	2,902.82	1,296.61		1,128.69		48,636.11	797,855.64	

## CEREAL AND FORAGE INSECT INVESTIGATIONS.

Total expenditures as above..... \$116,605.33  
 Outstanding liabilities, Aug. 31 (estimated). 205.68  
 Unexpended balance (estimated)..... 688.99

Total allotment..... 117,500.00

Distributed among the several subactivities as follows:

Supervision: General supervision of all the cereal and forage insect investigations, preparation of results for publication, and usual office routine..... 5,576.14

Cereal insects: Investigations of insects attacking cultivated grains, including the white grub, fall army worm, cutworms, western army cutworm, jointworm, wireworm, chinch bug, Hessian fly, corn rootworms, and miscellaneous insects affecting rye, barley, and other small grains; and experiments in the utilization of natural enemies of such insects, besides remedial and preventive measures through mechanical means..... 66,404.46

Forage insects: Studies of insects attacking plants used as forage, including the alfalfa weevil, range caterpillar, alfalfa seed chalcis, insects affecting the production of clover seed, and insects attacking soy bean, cowpea, and other plants and grasses used for forage; and investigation of methods of combating these insects through the employment of their natural enemies and the utilization of mechanical, remedial, and preventive measures..... 44,830.41

Total..... 116,811.01

## SOUTHERN FIELD-CROP INSECT INVESTIGATIONS.

Total expenditures as above..... \$61,508.24  
 Outstanding liabilities, Aug. 31 (estimated). 418.18  
 Unexpended balance (estimated)..... 73.58

Total allotment..... 62,000.00

Distributed among the several subactivities as follows:

Supervision: General supervision of southern field-crop insect investigations and conduct of usual office routine..... \$7,467.08

Cotton insects: Investigation of the cotton boll weevil, including life history studies, experiments in methods of cultivation, determination of the efficiency of hand picking of squares, value of parasitic enemies as a control measure, and collection of data as to the status and dispersion of the weevil; study of the habits and extent of damage caused by cotton root aphids, cutworms, red spider, cotton flea, and other insects, and development of methods of control; determination of the injury caused by thrips and other insects affecting cotton in the Imperial Valley, Cal., and of appropriate remedies; study of the relation of insects to the shedding of cotton fruit, with a view to reduce loss from this cause..... 27,887.45

Tobacco insects: Study of insects attacking tobacco, including hornworms, budworms, wireworms, and the large tobacco beetle; determination of methods of control, by spraying and otherwise, and demonstration to planters of such methods; determination of feasible means to prevent losses in warehouses and factories due to the cigarette beetle; investigation of insects which transmit the mosaic disease..... 16,764.00

Rice insects: Life history studies of the rice water weevil, plant bug, crambid, and other insect species responsible for injury to this crop, and determination and demonstration of control measures..... 1,917.27

Sugar-cane insects: Investigation of the moth borer, mealy bug, beetles, and other insect enemies of sugar-cane, with a view to discover means of suppressing them..... 4,317.21

Argentine ant: The object of this project is to reduce losses in cane plantations and orchards and prevent annoyance in warehouses, residences, and elsewhere caused by this insect..... 3,573.41

Total..... 61,926.42



## FOREST AND SHADE-TREE INSECT INVESTIGATIONS.

Total expenditures as above.....	\$58,205.62
Outstanding liabilities, Aug. 31 (estimated) ..	218.34
Unexpended balance (estimated) .....	406.04

Total allotment.....	58,830.00
----------------------	-----------

Distributed among the several subactivities as follows:

Supervision: General supervision of forest insect investigations and performance of laboratory experiments and office routine pertaining to the work as a whole.....	7,537.64
--	----------

Field investigations: Determination of the character, extent, cause, and methods of prevention and control of insect damage to forest reproduction, including seeds, seedlings, and saplings; the wood of dead, dying, and felled timber; crude, finished, seasoned, and utilized forest products, including poles, posts, mine props, railroad ties, etc.; hickory and ash forest and shade trees; and shade trees and hardy shrubs in general. Investigations of the relation of climatic conditions to forest-tree insects, including latitude, altitude, lightning, storms, etc., and of the interrelation of insects and forest fires in the destruction of forests. Systematic and economic investigations of the scolytoid bark and timber beetles of North America, of flat-headed borers, round-headed borers, and beneficial insects, and investigations of general methods of combating forest, forest-product, and shade-tree insects. Instructions and demonstrations in the national forests and national parks relating to practical methods of preventing and controlling extensive insect depredations.....	37,380.65
--	-----------

Laboratory investigations: Identification and classification of species; preparation of original description of species and the various stages in their life history; revising and bringing up to date the systematic knowledge of all North American species; determination of seasonal histories, food and breeding habits, geographical distribution, and such other information of a technical nature about the species as is essential to the best success in the investigation and practical treatment of economic problems relating particularly to forest and other scolytoid beetles, hymenopterous, coleopterous, dipterous, lepidopterous, and isopterous insects, and buprestid, cerambycid, and other coleopterous larvæ.....	13,505.67
--	-----------

Total.....	58,423.96
------------	-----------

## TRUCK-CROP AND STORED-PRODUCT INSECT INVESTIGATIONS.

Total expenditures as above.....	\$43,798.55
Outstanding liabilities, Aug. 31 (estimated) ..	341.24
Unexpended balance (estimated) .....	480.21

Total allotment.....	44,620.00
----------------------	-----------

Distributed among the several subactivities as follows:

Supervision: General supervision of truck-crop and stored-product insect investiga-

tions and performance of administrative and routine duties common to the entire work.....

\$6,636.19

Truck-crop insects: Determination by the usual field, experimental, and research methods of effective control measures against insects affecting potato, onion, cabbage, spinach, tomato, sweet potato, beans, peas, and other truck crops, including life-history studies and determination of the distribution, character, and extent of injury caused by the Colorado potato beetle, onion thrips, potato-tuber moth, corn-eat worm, cabbage and spinach aphids, pea aphid, cutworms, grasshoppers, insects injurious to greenhouse vegetables and certain miscellaneous crops, etc., many of which transmit serious plant diseases; determination of life histories of various sugar-beet infesting insects, such as the curly-top leafhopper, sugar-beet wireworms, leaf beetles, root aphid, white grubs, and other pests...

31,557.45

Stored-product insects: Studies of both common and newly introduced insects injuriously affecting stored wheat, corn, oats, and other grains and flour, meal, and other mill products, including all cereal foodstuffs in flour mills, elevators, and warehouses, involving special investigation of railway and steamboat lines as carriers of infestation; study of the insect enemies of dried fruits and nuts, beans, peas, and cowpeas, and cured meats, hides, furs, and manufactured fabrics; and investigation and demonstration of appropriate measures for the control of such insects, including tests of promising and standard fumigants and other insecticides against these species, and of kiln-drying and heat methods against grain pests, especially grain weevils, and of those attacking edible legumes .....

5,946.15

Total.....	44,139.79
------------	-----------

## BEE-CULTURE INVESTIGATIONS.

Total expenditures as above.....	\$16,139.69
Outstanding liabilities, Aug. 31 (estimated) ..	20.45
Unexpended balance (estimated) .....	199.86

Total allotment.....	16,360.00
----------------------	-----------

Determination of various methods by which bees respond to changes in external temperature, and best methods of caring for bees during winter; a study of the various diseases which affect the brood and adult bees; investigation of the development of the bee in the egg and in the larval stage; extension work in beekeeping in North Carolina.....

16,160.14

## TROPICAL AND SUBTROPICAL FRUIT INSECT INVESTIGATIONS.

Total expenditures as above.....	\$20,533.35
Outstanding liabilities, Aug. 31 (estimated) ..	308.43
Unexpended balance (estimated) .....	658.22

Total allotment.....	21,500.00
----------------------	-----------

Determination of the practicability of control measures for white fly; perfecting the most economical method of gassing citrus groves and citrus nursery stock to combat scale insects, and investigation of other citrus-

fruit insects, including the Argentine ant; investigation of various means of controlling injurious citrus insects; study of date-palm scale insects, and minor investigations of special forms of insect damage to tropical and subtropical fruits..... \$20,841.78

## INVESTIGATION OF THE MEDITERRANEAN FRUIT FLY.

Total expenditures as above..... \$15,259.11  
Outstanding liabilities, Aug. 31 (estimated).. 154.56  
Unexpended balance (estimated)..... 17,565.68

Total allotment..... 32,979.35

Study of the life history of the fruit fly in relation to its hosts, looking to means of control and cooperation in the introduction of parasites from foreign countries; inspection and certification of pineapples and bananas for export from Hawaii to the mainland of the United States under quarantine, and general enforcement of this quarantine; investigations of fruits likely to be imported into the United States from Mediterranean or other countries, as a basis for any necessary quarantine action; inspection and regulation of entry of fruit imported into the United States from Mediterranean and other countries in which the fruit fly is known to occur..... 15,413.67

## MISCELLANEOUS INSECT INVESTIGATIONS.

Total expenditures as above..... \$54,739.48  
Outstanding liabilities, Aug. 31 (estimated). 399.37  
Unexpended balance (estimated)..... 218.34

Total allotment..... 55,357.19

Distributed among the several subactivities as follows:

Investigation, identification, and systematic classification of miscellaneous insects: This covers the miscellaneous investigational work not specifically provided for in other projects of the bureau.. 27,199.97

Insects affecting the health of man: Investigation and eradication of the house fly, malaria-carrying mosquitoes, stable fly, Rocky Mountain spotted-fever tick, and other insects affecting the health of man.. 16,423.69

Insects affecting the health of domestic animals: Investigation of the various species of ticks which transmit disease or are important parasites of domestic animals, and of screw worm, ox warble, horsefly, horn fly, etc..... 11,515.19

Total..... 55,138.85

## MOTH INVESTIGATIONS.

Total expenditures as above..... \$312,685.24  
Outstanding liabilities, Aug. 31 (estimated). 530.75  
Unexpended balance (estimated)..... 8,504.01

Total allotment..... 321,720.00

Distributed among the several subactivities as follows:

Supervision: General supervision of work in prevention of the spread of gipsy and brown-tail moth, preparation of the results for publication, and routine clerical work. 27,319.16

Scouting and extermination: Determination of the area infested by the gipsy moth and the brown-tail moth, for the purpose of preventing the spread of these insects, and applying exterminative measures in the territory where the best results can be secured..... 171,794.52

Silviculture and gipsy-moth control: Determination of the relation of silvicultural conditions to gipsy-moth infestation, and demonstration of the best methods of handling forest growth so as to render it unfavorable to gipsy-moth attack; determination of the most profitable utilization of products cut..... 6,274.83

Laboratory and field investigations: Studies of the habits and life histories of imported parasites and natural enemies of the gipsy and brown-tail moths; determination of the extent to which these parasites are increasing under field conditions and their values as enemies of the insects concerned; collection and colonization of beneficial species in areas where they do not now exist in the infested territory; determination of the natural increase of the gipsy moth under field conditions; study of the feeding habits of the gipsy-moth larvæ in all stages and of the food plants upon which this species can not develop; investigation of the relation and effect on the increase of the gipsy moth of the disease known as "wilt," and of the effect of secondary insects on trees that have been defoliated by the gipsy moth; study of the means by which the gipsy moth spreads to new territory; and tests of new insecticides and methods of spraying or banding trees in order to enable control work to be carried on more efficiently and economically..... 61,173.95

Quarantine and inspection: Inspection of plants and forest and quarry products in order to prevent the dissemination of the gipsy moth and the brown-tail moth from infested areas; enforcement of regulations prescribed by Federal Horticultural Board. 46,653.53

Total..... 313,215.99



## BUREAU OF BIOLOGICAL SURVEY.

Classification of expenditures for the fiscal year ended June 30, 1916.

Project.	Salaries.				Travel, station, and field expenses.	Equipment.		
	Statutory.	Lump fund.		Total.		Apparatus, instruments, laboratory.	Furniture.	Miscella- neous.
		In Wash- ington.	Out of Washington.					
1 Administration .....	\$20,084.00	\$9,068.05	\$122.50	\$29,274.55	\$955.17	\$7.00	\$503.77	\$294.72
2 Game preservation .....	7,017.50	6,137.50	18,844.30	31,999.30	6,243.61	77.00	86.69	581.55
3 Economic investigations .....	1,740.00	25,648.90	202,579.75	229,968.65	27,451.06	220.00	326.51	3,300.98
4 Biological investigations .....	3,645.56	14,167.11	4,328.05	22,140.72	4,281.59		127.00	644.76
5 Enforcement of the migratory- bird law.	1,040.00	5,516.78	28,175.78	34,732.56	13,159.52		80.12	37.19
Total.....	33,527.06	60,538.34	254,050.38	348,115.78	52,090.95	304.00	1,124.09	4,859.20

## PROJECT STATEMENTS.

## ADMINISTRATION.

Total expenditures as above.....	\$32,813.05
Outstanding liabilities, Aug. 31 (estimated)...	59.44
Unexpended balance (estimated).....	1,092.51

Total allotment..... 33,965.00

Administration of the investigational work of the bureau and conduct of its business and routine laboratory operations.....	32,872.49
---	-----------

## GAME PRESERVATION.

Total expenditures as above.....	\$63,025.24
Outstanding liabilities, Aug. 31 (estimated)...	3,542.08
Unexpended balance (estimated).....	<sup>1</sup> 4,181.94

Total allotment..... 70,749.26

Distributed among the several subactivities as follows:

Supervision: General direction of the activities under this group, including necessary clerical and other routine work.....	8,019.00
Interstate commerce in game: Enforcement of sections 242 and 243 of the Criminal Code of the United States, regulating the interstate shipment of game; involves the collection of evidence of violations of the Federal game laws and its transmission to the Department of Justice and to State officials through the Solicitor's office and the giving of expert testimony when necessary.....	9,131.17
Importation of foreign mammals and birds: The prevention, by inspection service, of the introduction from foreign countries of injurious birds and mammals.....	741.76
General maintenance of reservations and refuges: Maintenance of areas set apart by Executive order or acts of Congress as breeding refuges for birds and game mammals and placed in charge of the Bureau of Biological Survey.....	13,885.08
Montana national bison range: Maintenance of reservation and care of the herds of buffaloes and other big animals located there.	1,997.41
Wind Cave preserve: Maintenance of a national game preserve in Wind Cave National Park, S. Dak.....	2,928.63

Winter elk refuge: Establishment and maintenance of a permanent winter refuge to insure perpetuation of elk in Wyoming.... \$15,446.05

Sullys Hill national game preserve: Improvement of a game preserve in Sullys Hill National Park, N. Dak., by the construction of a suitable inclosure, including necessary corrals, sheds, and buildings, for the proper care and maintenance of animals and birds to be placed therein..... 9,753.96

Restocking reservations: Restocking national game preserves and other reservations with big game and game birds adapted thereto.. 2,021.74

Publications: Compilation, publication, and distribution of information concerning game, game laws, interstate commerce in game, and importation of foreign birds.... 2,642.52

Total..... 66,567.32

## ECONOMIC INVESTIGATIONS.

Total expenditures as above.....	\$309,678.11
Outstanding liabilities, Aug. 31 (estimated)...	2,092.13
Unexpended balance (estimated).....	<sup>2</sup> 44,969.76

Total allotment..... 356,740.00

Distributed among the several subactivities as follows:

Supervision: General direction of the activities under this group, including necessary routine laboratory and office work.....	14,590.81
Relation of native and introduced mammals to agriculture: Investigation and demonstration of methods for the control of wild animals destructive to cereal, fruit, and vegetable crops, pasturage, forest growth, and other vegetation, live stock, and range lands, including moles, pocket gophers, prairie dogs, wolves, etc.....	104,676.57
Relation of native and introduced birds to agriculture: Field observations and laboratory investigations of birds' stomachs, with a view to determine from a knowledge of their feeding habits which species are beneficial and which injurious, and to make recommendations for the guidance of farmers, fruit growers, and foresters in their protection or control.....	12,747.14

<sup>1</sup> Includes \$1,296.12 from continuing appropriation for Wind Cave national game preserve (agricultural appropriation act for the fiscal year 1913) and \$226.59 from continuing appropriation for Sullys Hill national game preserve (fiscal years 1915 and 1916).

<sup>2</sup> Includes \$34,612.91 from continuing appropriation for suppressing the spread of rabies in wild animals (urgent deficiency act approved Feb. 28, 1916).

## BUREAU OF BIOLOGICAL SURVEY.

Classification of expenditures for the fiscal year ended June 30, 1916.

Stationery.	Rent.	Telegraph, telephone, and postage.	Freight, express, and drayage.	Furnishing of heat, light, power, electricity.	Forage purchased in bulk.	Fuel.	Specified items not otherwise classified.	Miscellaneous supplies, services, etc.	Total.	
\$699.79		\$189.54	\$236.54		\$25.45			\$626.52	\$32,813.05	1
50.85	\$150.00	164.46	442.22		81.00			10,003.46	63,025.24	2
307.50	580.96	367.94	1,501.69		4,047.40	\$145.10	1 \$13,000.00	41,560.36	309,678.11	3
75.89	10.00	9.47	78.95		86.98	45.06		1,461.61	28,916.97	4
26.76		153.49	2.68		.50	8.40		193.22	48,394.44	5
1,160.79	740.96	884.90	2,262.08		4,241.33	198.56	13,000.00	53,845.17	482,827.81	

<sup>1</sup> Land.

Rearing fur-bearing animals: Determination of the best methods of feeding, confining, and otherwise handling fur-bearing animals, especially foxes, minks, and martens; determination of species most suitable for domestication; development of superior types by selective breeding; investigation of the effects of temperature on fur growth; and tests of methods of dressing peltries and of caring for dressed furs.....	\$5,735.76
Destruction of ground squirrels in national forests and on other public lands: Development and application of practical methods for the control of ground squirrels in national forests and on other public lands, in order to prevent injury by them to range areas and invasion by them of private lands surrounded by or adjacent to Government lands.....	14,551.11
Disease of wild ducks: Investigation of the great mortality among the wild ducks of Salt Lake Valley, Utah, to determine its cause and discover means of prevention.....	2,487.14
Destruction of predatory animals in national forests, on the public domain, and elsewhere: Systematic and economical control on the Government reserves, public domain, and elsewhere of wolves, coyotes, and other mammals destructive to live stock; control and suppression of wild animals infected with rabies; collecting information on the losses occasioned by such animals.....	156,981.71
Total.....	311,770.24

## BIOLOGICAL INVESTIGATIONS.

Total expenditure as above.....	\$28,916.97
Outstanding liabilities, Aug. 31 (estimated)...	671.92
Unexpended balance (estimated).....	814.45
Total allotment.....	30,403.34

Distributed among the several subactivities as follows:

Supervision: General direction of the projects under this group, including necessary clerical and other routine work.....	5,932.43
Biological surveys of the States and Territories: Determination of the distribution, abundance, and habits of the birds and mammals of the States and the distribution	

of the principal plants, in order to secure information for publication which will be of use to the public in the conservation of the bird and mammal life and to obtain data by which the boundaries of the natural life zones may be determined.....	\$12,904.53
Investigations of birds and mammals of the public domain: Investigation of the wild life of the public domain, particularly in the national forests and Federal preserves, with special reference to fur bearers and species classed as game, in order to assist in the conservation of the valuable species and the destruction of the harmful ones...	8,362.21
Bird migration: Determination of the migratory movements of game and other birds and their breeding and wintering locations, to serve as a basis for the conservation of useful species and for use in the formulation of regulations under the Federal migratory-bird act.....	2,389.72
Total.....	29,588.89

## ENFORCEMENT OF THE MIGRATORY-BIRD LAW.

Total expenditures as above.....	\$48,394.44
Outstanding liabilities, Aug. 31 (estimated)...	174.66
Unexpended balance (estimated).....	2,587.56
Total allotment.....	51,156.66

Distributed among the several subactivities as follows:

Supervision: General supervision, including necessary clerical and other routine work..	7,631.31
Migratory-bird protection: Protection of migratory waterfowl, shore birds, and insectivorous birds through the establishment of a warden service and cooperation with State game associations in connection with the enforcement of the provisions of the migratory-bird law.....	39,634.57
Investigation of migratory wild fowl: Securing information concerning the distribution and abundance of migratory wild fowl in their breeding and wintering resorts, for the purpose of obtaining data on the increase or decrease of the species as a basis for the formulation of proper regulations under the migratory-bird law.....	1,303.22
Total.....	48,569.10



## DIVISION OF PUBLICATIONS.

Classification of expenditures for the fiscal year ended June 30, 1916.

Project.	Salaries.				Travel, station, and field expenses.	Equipment.		
	Statutory.	Lump fund.				Apparatus, instruments, laboratory.	Furniture.	Miscella- neous.
		In Wash- ington.	Out of Washington.	Total.				
Publication work of the Department of Agriculture.....	\$173,399.45	.....	.....	\$173,399.45	.....	\$657.66	\$981.06	\$1,482.44

## PROJECT STATEMENT.

Total expenditures as above.....	\$191,291.72	Editorial work: Handling of all manuscripts submitted for publication, including preparation of copy for the printer, editing, revising, proof reading, compiling, abstracting, etc.....	\$19,788.28
Outstanding liabilities, Aug. 31 (estimated)..	117.95	Indexing: Preparation of indexes to publications when necessary; card indexing by subjects all publications issued by department.....	10,624.33
Unexpended balance (estimated).....	2,090.33	Illustration work: Preparation of drawings and photographs used in illustrating publications of the department; photographic and drafting work for all branches of the	
Total allotment.....	193,500.00		
Distributed among the several subactivities as follows:			
Administration: Direction and supervision of the publication work of the department, including expenditures from the general printing fund of \$500,000; routine correspondence and clerical work.....			
	21,148.55		

## BUREAU OF CROP ESTIMATES.

Classification of expenditures for the fiscal year ended June 30, 1916.

	Project.	Salaries.				Travel, station, and field expenses.	Equipment.		
		Statutory.	Lump fund.		Total.		Apparatus, instruments, laboratory.	Furniture.	Miscella- neous.
			In Wash- ington.	Out of Washington.					
1	Administration.....	\$20,592.06	\$64.00	-----	\$20,656.06	-----	\$200.58	\$167.99	
2	Crop reporting and estimating..	63,990.35	12,456.82	\$77,448.45	153,895.62	\$53,897.18	561.81	1,777.23	
3	Crop recording and abstracting..	31,415.89	7,851.52	-----	39,267.41	-----	163.57	805.45	
	Total.....	115,998.30	20,372.34	77,448.45	213,819.09	53,897.18	925.96	2,750.67	

## PROJECT STATEMENTS.

## ADMINISTRATION.

Total expenditures as above.....	\$21,629.76
Outstanding liabilities, Aug. 31 (estimated)..	105.00
Unexpended balance (estimated).....	222.00
Total allotment.....	21,956.76

This project covers the office of the chief, having general direction and supervision of the work of the bureau; also the office of the chief clerk, which has direct supervision of the fiscal operations, the records, files and correspondence, the custody of property, the distribution of seeds and publications to crop correspondents, and matters relating to the personnel.....

21,734.76

## CROP REPORTING AND ESTIMATING.

Total expenditures as above.....	\$217,612.51
Outstanding liabilities, Aug. 31 (estimated)..	495.00
Unexpended balance (estimated).....	2,227.77
Total allotment.....	220,335.28

Distributed among the several subactivities as follows:

General crop and live-stock estimates: The issuance periodically of estimates on the acreage, condition, yield, and value of staple crops, and the numbers, condition, and value of live stock in the United States, based on information furnished by the field agents and collected from a list of 160,000 farmers, merchants, and others acting as crop correspondents of the bureau.	\$205,163.32
Truck-crop investigations: The issuance periodically of estimates of the acreage, condition, and yield of truck crops of the United States, based on data furnished by the truck-crop specialist and field agents and secured through correspondence with a list of about 8,500 truck growers and dealers.	12,424.58
Estimates of planting and harvesting dates of principal crops: An estimate of the average dates of seeding and harvesting of crops in the United States (in cooperation with the Bureau of Plant Industry).....	519.61
Total.....	218,107.51

## DIVISION OF PUBLICATIONS.

*Classification of expenditures for the fiscal year ended June 30, 1916.*

Stationery.	Rent.	Telegraph, telephone, and postage.	Freight, express, and drayage.	Furnishing of heat, light, power, electricity.	Forage purchased in bulk.	Fuel.	Specified items not otherwise classified.	Miscellaneous supplies, services, etc.	Total.
\$11,208.26	.....	\$211.50	\$26.71	.....	.....	.....	<sup>1</sup> \$1,267.33	\$2,057.31	\$191,291.72

<sup>1</sup> Engraving, \$579.80; cleaning and toilet supplies, \$450.11; mechanics', engineers', and electricians' supplies, \$237.42.

department for official record and for lectures; preparation of lantern slides for official use, and photographs and lantern slides for furnishing to applicants at a price authorized by law; production of motion pictures of the department's activities, for educational purposes..... \$35,106.69

Distribution of documents: Cooperation with the Government Printing Office in the distribution of department publications; maintenance of record of distribution of department publications; storing and mailing of

publications used in the department distribution; mailing of all press notices; preparation of duplicating forms and circular letters for the various bureaus; preparation of congressional correspondence relating to quotas of farmers' bulletins; mailing of all publications sent to foreign addresses, and recording of such distribution; maintenance of mailing lists, etc..... \$104,741.82

Total..... 191,409.67

## BUREAU OF CROP ESTIMATES.

*Classification of expenditures for the fiscal year ended June 30, 1916.*

Stationery.	Rent.	Telegraph, telephone, and postage.	Freight, express, and drayage.	Furnishing of heat, light, power, electricity.	Forage purchased in bulk.	Fuel.	Specified items not otherwise classified.	Miscellaneous supplies, services, etc.	Total.
\$182.63	.....	\$113.64	\$68.49	.....	.....	.....	\$135.31	\$105.06	\$21,629.76
5,861.46	\$90.00	650.00	100.00	.....	.....	.....	157.16	622.05	217,612.51
310.52	.....	.....	.....	.....	.....	.....	29.30	120.27	40,696.52
6,354.61	90.00	763.64	168.49	.....	.....	.....	<sup>1</sup> 321.77	847.38	279,938.79

<sup>1</sup> Cleaning and toilet supplies.

## CROP RECORDING AND ABSTRACTING.

Total expenditures as above..... \$40,696.52

Outstanding liabilities, Aug. 31 (estimated)... 75.00

Unexpended balance (estimated)..... 416.44

Total allotment..... 41,187.96

Distributed among the several subactivities as follows:

United States and foreign crop data: The compilation of United States and foreign crop statistics from official and private sources and the preparation of United States agricultural data furnished to the International Institute of Agriculture; also the maintenance of a library embracing statistics of foreign and domestic agriculture.. 27,736.27

International trade of the United States in agricultural products: Estimates of the exports and imports of farm and forest products, embracing comparative data as far back as 1790, for publication in the Yearbook of the department and dissemination through correspondence in the form of tabular statements..... 1,487.06

Geographical phases of farm prices: Studies of the variance in prices of farm products in different localities..... 808.52

Fruits and nuts in foreign countries: Collecting, abstracting, and interpreting data relative to production and trade in fruits and nuts in foreign countries, in cooperation with the Office of Markets and Rural Organization and the Bureau of Plant Industry.. \$5,847.49

Agricultural element of population: Collecting, abstracting, and interpreting data relative to the proportion of the population of the world engaged in various phases of agriculture..... 76.81

International sugar investigation: Study of the world's production and consumption of sugar and of sugar prices and other data relative to the sugar industry..... 1,566.84

Surplus and deficiency of national agricultural products: Collection for study and publication of information concerning the relation of production to consumption of various farm and forest products, with special reference to food products in the United States..... 2,174.40

Meat situation in the United States: Investigation of the meat situation in the United States with reference to the supply, production, prices, and consumption of meat and meat products..... 1,074.13

Total..... 40,771.52



## STATES RELATIONS SERVICE.

Classification of expenditures for the fiscal year ended June 30, 1916.

Project.		Salaries.				Travel, station, and field expenses.	Equipment.		
		Statutory.	Lump fund.		Total.		Apparatus, instruments, laboratory.	Furniture.	Miscella- neous.
			In Wash- ington.	Out of Washington.					
1	General administration.....	\$34,521.33	\$15,772.85		\$50,294.18	\$499.44		\$826.55	\$55.16
2	Administration of the Hatch, Adams, and Smith-Lever Acts.	10,557.45	35,592.33		46,149.78	1,811.96		467.09	
3	Farmers' cooperative demon- strations in the Northern and Western States.	16,417.23	49,969.18	\$291,400.31	357,786.72	29,417.89		1,921.65	348.78
4	Farmers' cooperative demon- strations in the Southern States.	31,864.67	35,661.79	511,250.22	578,776.68	97,144.29		2,285.18	228.64
5	Farmers' institutes and agricul- tural schools.	5,263.38	14,972.49	436.16	20,672.03	2,672.89		277.14	170.75
6	Alaska experiment stations.....			29,248.41	29,248.41	1,001.21		225.55	4,458.30
7	Hawaii experiment station.....			27,144.45	27,144.45	1,707.22	\$47.35	529.33	1,794.44
8	Porto Rico experiment station.....			25,325.61	25,325.61	1,161.41	89.11	217.40	1,634.80
9	Guam experiment station.....			10,735.45	10,735.45	252.18	95.40	89.62	747.60
10	Home economics investigations.	3,480.00	23,471.66		26,951.66	503.34	181.20	384.07	67.13
Total.....		102,104.06	175,440.30	895,540.61	1,173,084.97	136,171.83	413.06	7,223.58	9,505.60

## PROJECT STATEMENTS.

## GENERAL ADMINISTRATION.

Total expenditures as above..... \$54,294.76  
 Outstanding liabilities, Aug. 31 (estimated)... 77.68  
 Unexpended balance (estimated)..... 248.89

Total allotment..... 54,621.33

General direction and supervision of the work of the States Relations Service, including the office of the director, the chief clerk's office, editorial offices, library, accounts, records, supplies, and property..... 54,372.44

## ADMINISTRATION OF THE HATCH, ADAMS, AND SMITH-LEVER ACTS.

Total expenditures as above..... \$49,318.81  
 Outstanding liabilities, Aug. 31 (estimated)... 11.59  
 Unexpended balance (estimated)..... 627.05

Total allotment..... 49,957.45

Supervision of the work and expenditures of the State agricultural experiment stations, under the acts of Mar. 2, 1887, and Mar. 16, 1906, and acts supplementary thereto, providing funds to State agricultural colleges for the prosecution of investigational work, and under the act of May 8, 1914, providing for cooperation between the State agricultural colleges and the Department of Agriculture in extension work, including the annual inspection of each college and station, examination of the accounts, financial reports, equipment, publications, etc., and personal conference with the college and station officials to determine the legitimacy and efficiency of their work and expenditures; preparation of annual reports to Congress on the work and expenditures of each station; advice to stations regarding personnel, lines of work, equipment, publications, etc.; collection of literature on agricultural science throughout the world and the preparation of summaries of the same in the Experiment Station Record, consisting of 18 numbers of 100 pages each, annually, with detailed indexes; prepara-

tion of card indexes on publications of American stations for the use of agricultural colleges and experiment stations, State departments of agriculture, and others; and exchange of information regarding the organization and progress of agricultural research with over 1,000 experiment stations and kindred institutions in more than 50 countries..... \$49,330.40

## FARMERS' COOPERATIVE DEMONSTRATIONS IN THE NORTHERN AND WESTERN STATES.

Total expenditures as above..... \$396,152.37  
 Outstanding liabilities, Aug. 31 (estimated)... 4,770.03  
 Unexpended balance (estimated)..... 1,574.83

Total allotment..... 402,497.23

Distributed among these several subactivities as follows:

Supervision: General supervision of farmers' cooperative demonstration work in the 33 Northern and Western States, including supplies, equipment, and miscellaneous labor..... 95,850.36

County-agent work: Instruction and demonstrations in agriculture, in cooperation with State agricultural colleges, by means of county agricultural agents, for the purpose of securing the adoption of better farm practice, organization, and administration, to the end of increasing the profits of farming and improving rural social life..... 228,291.73

Boys' and girls' club work: Cooperation with State agricultural colleges in the organization of young people of the farm into clubs, with a view to interest boys and girls and, through them, farm men and women in farm, farm home, and rural community problems; to teach them better methods of farm, garden, and home practice; to bring them in touch with the work of the department and of the agricultural colleges and schools; and to encourage them in securing such an education as will aid in making them useful and successful workers, home makers, and citizens..... 45,720.45

## STATES RELATIONS SERVICE.

Classification of expenditures for the fiscal year ended June 30, 1916.

Stationery.	Rent.	Telegraph, telephone, and postage.	Freight, express, and drayage.	Furnishing of heat, light, power, electricity.	Forage purchased in bulk.	Fuel.	Specified items not otherwise classified.	Miscellaneous supplies, services, etc.	Total.	
\$1,744.68		\$127.49	\$11.47					\$735.79	\$54,294.76	1
287.31		39.21	4.83					558.63	49,318.81	2
4,893.64	\$135.00	442.49	431.99					774.21	396,152.37	3
4,173.59	538.00	1,545.12	595.41					1,739.23	687,026.14	4
293.44		40.89	7.11					600.12	24,734.37	5
55.46	265.00	44.29	1,264.88	\$666.30	\$1,380.15	\$694.75		1,830.50	41,134.80	6
237.00		276.85	135.14	370.33	992.38			1,661.03	34,895.52	7
185.00		51.00	149.68	227.89	439.07			1,707.00	31,187.97	8
19.57		137.56	497.10		1,007.20			1,488.82	15,070.50	9
226.68		12.83	27.23					1,286.79	29,640.93	10
12,116.37	938.00	2,717.73	3,124.84	1,264.52	3,818.80	694.75		12,382.12	1,363,456.17	

Farm-management demonstrations: Demonstrations to farmers, in cooperation with State agricultural colleges, of the importance of certain efficiency factors relating to the organization and administration of the farm, including instructions in methods of analyzing their own business and of working out their labor income.....

\$31,059.86

Total..... 400,922.40

## FARMERS' COOPERATIVE DEMONSTRATIONS IN THE SOUTHERN STATES.

Total expenditures as above..... \$687,026.14  
Outstanding liabilities, Aug. 31 (estimated).. 9,146.43  
Unexpended balance (estimated)..... 1,712.10

Total allotment..... 697,884.67

Distributed among the several subactivities as follows:

Supervision: General supervision of farmers' cooperative demonstration work in the 15 Southern States, including supplies, equipment, and miscellaneous labor..... 91,192.89

County-agent and boys' club work: Instruction and demonstrations in agriculture, in cooperation with State agricultural colleges, by means of county agricultural agents, for the purpose of securing the adoption of better farm practice, organization, and administration, to the end of increasing the profits of farming and improving rural social life; teaching and demonstration of methods of meeting the ravages of the cotton boll weevil in all cotton territory; agricultural instruction to boys through the organization and work of boys' clubs..... 519,128.35

Home demonstration work, including girls' club work: This work includes demonstrations in the preparation and care of home gardens and in poultry raising; also the organization of women's clubs for general study, and of girls' clubs for the teaching of gardening, cooking, and other subjects.. 85,851.33

Total..... 696,172.57

## FARMERS' INSTITUTES AND AGRICULTURAL SCHOOLS.

Total expenditures as above..... \$24,734.37  
Outstanding liabilities, Aug. 31 (estimated).. 111.55  
Unexpended balance (estimated)..... 1,017.46

Total allotment..... 25,863.38

Distributed among the several subactivities as follows:

Farmers' institutes and movable schools: Investigations and reports upon the organizations and progress of farmers' institutes, movable schools, and similar organizations in the United States and foreign countries, for the purpose of obtaining special suggestions of plans and methods for making these organizations more effective for the dissemination of the results of the work of the department and the agricultural experiment stations and to improve methods of agricultural practice..... 9,148.81

Investigations of agricultural instruction in schools: Study of agriculture in this and other countries, with a view to determine the needs of such instruction, in order to make it practically useful to students who are to become farmers or workers in agricultural institutions; and furnishing schools with up-to-date and properly organized subject matter and illustrative materials to supplement and reinforce textbooks and field practice..... 15,697.11

Total..... 24,845.92

## ALASKA EXPERIMENT STATIONS.

Total expenditures as above:  
Appropriation, 1916..... \$39,680.07  
Receipts from sale of products 1,454.73  
\$41,134.80  
Outstanding liabilities, Aug. 31 (estimated).. 319.93

Total allotment..... 41,454.73

Maintenance of a central station located at Sitka, Alaska, with subsidiary stations at



Fairbanks, Rampart, and Kodiak, to investigate the agricultural and horticultural resources of Alaska and determine their possibilities, including the development of animal industry, dairying, etc., and the introduction of cattle and sheep for experimental purposes; and an agricultural survey of the Matanuska River valley preparatory to the location and establishment of an agricultural experiment station to the north of Cook Inlet after completion of the Government railroad..... \$41,454.73

## HAWAII EXPERIMENT STATION.

Total expenditures as above:  
 Appropriation, 1916..... \$34,778.40  
 Receipts from sale of products..... 117.12  
 34,895.52  
 Outstanding liabilities, Aug. 31 (estimated). 221.60  
 Total allotment..... 35,117.12

Maintenance of a station at Honolulu, Hawaii, to study diversified agriculture, including the proper management of soil for rice and pineapples, plant-breeding experiments, introduction of forage crops, and a general

study of the peculiar agricultural needs of this group of islands, and demonstrations to farmers and communities on the different islands composing the group in growing, handling, and marketing tropical and subtropical crops, including pineapples, bananas, cotton, roselle, corn, potatoes, onions, garden vegetables, etc., and in stock raising, dairying, etc..... \$35,117.12

## PORTO RICO EXPERIMENT STATION.

Total expenditures as above:  
 Appropriation, 1916..... \$30,000.00  
 Receipts from sale of products..... 1,187.97  
 Total allotment..... \$31,187.97

Maintenance of a station at Mayaguez, P. R., to investigate problems underlying the development of agriculture and to devise means and methods of improving the art and practice, special attention being given to the development of the citrus fruit and pineapple industries, coffee improvement, methods for control of various fungous and insect pests, the bee-keeping industry, and the breeding and feeding of live stock..... 31,187.97

## OFFICE OF PUBLIC ROADS AND RURAL ENGINEERING.

*Classification of expenditures for the fiscal year ended June 30, 1916.*

	Project.	Salaries.			Travel, station, and field expenses.	Equipment.			
		Statutory.	Lump fund.			Total.	Apparatus, instruments, laboratory.	Furniture.	Miscella- neous.
			In Wash- ington.	Out of Washington.					
1	Administration.....	\$27,611.63	\$2,634.82	\$125.00	\$30,371.45	\$791.07	\$16.49	\$456.22	\$246.42
2	Road - management investiga- tions.	10,623.50	19,705.56	12,523.00	42,852.06	7,113.57	582.67	203.04	78.00
3	Road building and maintenance investigations.	7,799.46	27,732.16	83,169.08	118,700.70	30,734.20	105.36	104.44	559.00
4	Road-material investigations...	9,476.67	23,356.31	3,122.13	35,955.11	1,745.02	1,524.44	248.07	427.74
5	Field experiments.....	2,195.00	7,945.88	4,581.35	14,722.23	13,834.23	2,007.17	42.20	803.59
6	Farm irrigation investigations...	7,051.12	13,603.35	56,825.31	77,479.78	22,007.06	833.51	375.64	3,297.17
7	Farm drainage investigations...	9,157.83	20,247.83	40,725.71	70,131.37	26,069.82	865.80	156.06	390.00
8	Investigations in rural engineer- ing.	1,000.00	9,691.01	388.00	11,079.01	1,620.07	74.55	25.55	14.99
9	Improvement of post roads.....								
	Total.....	74,915.21	124,916.92	201,459.58	401,291.71	103,915.04	6,009.99	1,611.22	5,816.91

## PROJECT STATEMENTS.

## ADMINISTRATION.

Total expenditures as above..... \$39,268.64  
 Outstanding liabilities, Aug. 31 (estimated).. 788.28  
 Unexpended balance (estimated)..... 154.71

Total allotment..... 40,211.63

This project covers the general administration of the business affairs of the office and the general direction of all its investigational activities..... 40,056.92

## ROAD-MANAGEMENT INVESTIGATIONS.

Total expenditures as above..... \$52,352.79  
 Outstanding liabilities, Aug. 31 (estimated).. 677.08  
 Unexpended balance (estimated)..... 193.63

Total allotment..... 53,223.50

Distributed among the several subactivities as follows:

Supervision: Direction of the various research and extension activities under this group and conduct of routine office business, including correspondence, maintenance of records, purchase of supplies and equipment, and other clerical work..... \$11,232.56

General statistical and research investigations: The object of this work is to secure accurate figures on mileage of roads throughout the United States and the cost of construction, repair, and maintenance, and to collect and systematize all current information relative to highways throughout the country..... 11,674.07

Utilization of convict labor in road management: Study of the management, operation, discipline, and results obtained in convict road camps; testing, under cooperative ar-

## GUAM EXPERIMENT STATION.

Total expenditures as above:	
Appropriation, 1916.....	\$14, 996. 83
Receipts from sale of products.....	73. 67
	<u>\$15, 070. 50</u>
Outstanding liabilities, Aug. 31 (estimated).....	3. 17
Total allotment.....	<u>15, 073. 67</u>
Maintenance of a station at Agana, Guam, to conduct investigations and carry on experiments to determine the agricultural possibilities and improve the agricultural practices of the island, through the introduction of improved varieties of forage, fruit, and vegetable crops, pure-bred horses, cattle, goats, swine, and poultry, and the use of modern implements.....	15, 073. 67
HOME ECONOMICS INVESTIGATIONS.	
Total expenditures as above.....	\$29, 640. 93
Outstanding liabilities, Aug. 31 (estimated).....	178. 88
Unexpended balance (estimated).....	160. 19
Total allotment.....	<u>29, 980. 00</u>

Distributed among the several subactivities as follows:	
Respiration calorimeter investigations: Studies by special calorimetric methods of agricultural products with reference to their use in the home for food, clothing, and equipment, and the household tasks which their use involves, for the purpose of suggesting plans and methods for the more effective utilization of such products for these purposes; including experiments on the incubation of eggs, ripening of fruits and vegetables, and studies of labor expenditure and efficiency in household activities.....	\$7, 734. 25
Studies of food, dietetics, clothing, and household equipment, work, and management: Studies of the nature of agricultural products used in the home for food, clothing, and equipment; studies of household processes, methods, and uses pertaining thereto; classification, comparison, revision, and digest of the information useful to housekeepers, students, and extension workers; and the dissemination of the results of research....	22, 085. 56
Total.....	<u>29, 819. 81</u>

## OFFICE OF PUBLIC ROADS AND RURAL ENGINEERING.

Classification of expenditures for the fiscal year ended June 30, 1916.

Stationery.	Rent.	Telegraph, telephone, and postage.	Freight, express, and drayage.	Furnishing of heat, light, power, electricity.	Forage purchased in bulk.	Fuel.	Specified items not otherwise classified.	Miscellaneous supplies, services, etc.	Total.	
\$2, 217. 60		\$1, 764. 58	\$943. 26	\$1, 462. 80				\$998. 75	\$39, 268. 64	1
598. 72		25. 10	17. 51					882. 12	52, 352. 79	2
459. 11		106. 88	177. 72					472. 54	151, 419. 95	3
60. 82		4. 15	3. 67					1, 165. 61	41, 134. 63	4
201. 77	\$12. 00	. 55	923. 96					16, 024. 30	48, 572. 00	5
1, 347. 24	1, 016. 78	403. 37	1, 351. 86	98. 80				2, 611. 68	110, 822. 89	6
223. 99	759. 50	123. 59	1, 200. 50					1, 159. 14	101, 079. 77	7
37. 90		2. 71	. 51					204. 91	13, 060. 20	8
							1 162, 920. 71		162, 920. 71	9
5, 147. 15	1, 788. 28	2, 430. 93	4, 618. 99	1, 561. 60			162, 920. 71	23, 519. 05	720, 631. 58	

1 Construction work under contract.

rangements with State and local authorities, systems of record, cost keeping, and management desired by this office; and dissemination of results obtained by these studies and tests.....	\$3, 554. 05	post roads improved under the supervision of this office.....	\$8, 435. 29
Observation of experimental convict camp in connection with road management: Study of a specially operated experimental camp, with a view to ascertain the most practicable structures, equipment, sanitation, clothing, diet, organization, discipline, and methods of management in connection with the utilization of convict labor in road construction.....	2, 395. 22	Traffic studies: The assembling of all practicable data on the regulation of traffic, the adaptation of various types of road surface to traffic conditions, and the relation of maintenance methods and cost to traffic requirements.....	2, 414. 98
Economic study of highway systems: Studies of the organization, procedure, cost of operation, and the results obtained in the management of highway construction and maintenance in counties and townships by State highway departments on work done under State supervision, together with investigations of an economic character of		Advice, lectures, and demonstrations of road and bridge models: The object of this project is to provide, upon the request of public officials and organizations, expert advice on road legislation, organization, and management, through conferences, lectures, and demonstrations, and to demonstrate by the intelligent use of road models, lantern slides, and popular lectures the various phases of road construction and improvement.....	13, 323. 70
		Total.....	53, 029. 87



## ROAD BUILDING AND MAINTENANCE INVESTIGATIONS.

Total expenditures as above.....	\$151,419.95
Outstanding liabilities, Aug. 31 (estimated)...	424.41
Unexpended balance (estimated).....	755.10

Total allotment.....	152,599.46
----------------------	------------

Distributed among the several subactivities as follows:

Supervision: Direction of the various subactivities under this group and conduct of routine office business, including correspondence, maintenance of records, purchase of supplies and equipment, etc.....	17,789.45
Object-lesson roads: Demonstration of the proper methods of construction and the most efficient use of materials for the purpose of instructing local road officials in the art of road building, and correlation of conclusions drawn from laboratory tests with those resulting from service tests.....	18,912.93
County road systems: Study of the roads of a county or other political subdivision and preparation of general plans and specifications for their administration, improvement, and maintenance.....	9,979.43
Inspection, advice, and lectures: Inspections by highway engineers and studies of specific local problems in road construction and maintenance; and preparation of definite recommendations for the solution of these problems, and the imparting of this information to road officials, highway associations, mass meetings of citizens, and others who require it.....	31,779.02
Superintendence of county roads: Demonstration to county officials of the advantages accruing from the supervision of all county roads by one skilled in highway construction and maintenance and the advantages of centralized control over all roads in a county.....	4,080.66
Bridge construction in connection with road building and maintenance: This work consists of furnishing local officials with plans and specifications for bridges and investigating conditions and advising the authorities interested as to the best methods of bridge construction to meet their peculiar needs and conditions.....	10,141.70
Improvement of roads in national forests: Cooperation with the Forest Service in the improvement of roadways in the national forests through advice to local forest officials as to the best methods of constructing and maintaining roads; also making surveys and supervising the construction of a system of roads through the various forest reserves.....	17,626.90
Improvement of roads in national parks: Cooperation with national-park officials as to the best methods of constructing and maintaining roads in various national parks through the making of surveys and designs for the opening of trails and the construction of roads, the furnishing of advice as to the best methods of constructing and maintaining them, the making of inspections, and the preparation of recommendations for the guidance of local park officials in the improvement of park highways.....	1,488.89
Road maintenance: Studies of the details of systematic maintenance developed by highway departments in representative States and of country road maintenance in selected counties having improved roads, with a view to the general dissemination of such information among road officials; and study of the maintenance of the Washing-	

ton-Atlanta highway, in cooperation with local road officials, with the object of ascertaining the cost of effective maintenance over a long stretch of road and demonstrating the methods employed..... \$18,744.27

Improvement of post roads: Cooperation with the Post Office Department, under the terms of the act of Aug. 24, 1912, in the construction and improvement of highways over which United States mail is carried by making inspections, furnishing estimates of cost and other data, and providing the services of engineers to supervise such construction and improvement..... 21,301.11

Total.....	151,844.36
------------	------------

## ROAD-MATERIAL INVESTIGATIONS.

Total expenditures as above.....	\$41,134.63
Outstanding liabilities, Aug. 31 (estimated)...	3,068.15
Unexpended balance (estimated).....	93.89

Total allotment.....	44,296.67
----------------------	-----------

Distributed among the several subactivities as follows:

Supervision: Direction of the various subactivities under this group and conduct of routine office work.....	11,715.78
Routine chemical testing and inspection: Determination of the relative efficiency of various dust preventives and road binders, including tar, oil, native asphalt preparations, and other materials used as dust palliatives or as binding materials for any of the various types of roads, and for the purpose of drawing specifications for this class of materials.....	3,560.46
Microscopic examination and classification of road-building rocks: General study of rocks in relation to their adaptability for road construction and maintenance, the identification of road-building rocks, and a study of the relation of physical properties to mineral composition; also investigation of the value of blast-furnace and open-hearth slags as road-building material....	1,681.78
Investigation of the properties of dust preventives and road binders: Laboratory studies of the essential characteristics of dust preventives and road binders and studies of the effect of methods of manufacture upon the product obtained and of the behavior of these materials under varying conditions.....	5,054.21
Standardization of methods of testing bituminous road materials: Investigation and revision of present practices and development of new and improved methods of testing bituminous materials, with a view to their standardization, the work being conducted in cooperation with technical societies.....	1,959.26
Experimental bituminous road construction and maintenance: Development of new types of bituminous-bound and bituminous-treated roads, and the correlation of laboratory experiments with field service tests.....	2,964.26
Physical testing of road-building materials: Determination, by means of physical tests, of the suitability of various materials intended for use in road construction.....	3,015.09
Concrete investigations: Investigation of the physical properties of concrete, including studies of the effect of flow, determination of the laws of expansion and contraction of	

concrete, factors involved in the distribution of stresses in reinforced slabs, study of concrete bases, etc.....	\$8,652.98
Nonbituminous road-material investigations: Investigation of the physical properties of nonbituminous road materials, correlation of the results of physical tests with behavior in actual service, and development of tests to meet new conditions in road construction.....	1,469.27
Standardization of methods of testing nonbituminous road materials: Study of physical methods in common use and the development of new tests, with a view to their standardization, in order that comparable results may be obtained by the various laboratories testing nonbituminous road materials.....	527.22
Instrument making and repairing: Construction and repair of instruments and testing machines used in the road-material investigations.....	3,602.47
Total.....	44,202.78

## FIELD EXPERIMENTS.

Total expenditures as above.....	\$48,572.00
Outstanding liabilities, Aug. 31 (estimated).....	14,113.79
Unexpended balance (estimated).....	709.21
Total allotment.....	63,395.00
Distributed among the several subactivities as follows:	
Supervision: Direction of the various subactivities under this group and conduct of routine office work.....	828.99
Experimental road construction: Experiments to determine the relative merits and value of various preparations and materials for use in road construction and of the various methods and types of road construction, short sections of road being built for this purpose in cooperation with local authorities.....	41,381.63
Traction tests: Investigation of the effect of width of tire, diameter of wheel, type and size of axle bearing, kind of power, and method of application of power on tractive effort required to haul vehicles over various types of road surfaces; accumulation and study of comparative data on the resistance offered to traction by unimproved and improved road surfaces and by grades in the case of automobiles and horse-drawn vehicles; and determination of the comparative pulling power and sustained effort and its relation to the rations of light and heavy draft animals.....	9,226.69
Experimental road maintenance: The object of this project is to conduct experimental maintenance over a period of five years or more to secure accurate cost data for various types of roads built under specific appropriations by the department for experimental purposes.....	8,942.22
Road and bridge foundation tests: Determination of the distribution of pressure through fills and foundations and study of the effect of loads on road surfaces and road foundations.....	2,306.26
Total.....	62,685.79

## FARM IRRIGATION INVESTIGATIONS.

Total expenditures as above.....	\$110,822.89
Outstanding liabilities, Aug. 31 (estimated).....	3,272.64
Unexpended balance (estimated).....	355.59
Total allotment.....	114,451.12
Distributed among the several subactivities as follows:	
Supervision: Direction of farm irrigation investigations and conduct of the editorial, clerical, and other routine work.....	13,743.88
Utilization of water in irrigation: Investigations to determine what constitutes the best utilization of water in irrigation, as to the quantity used and methods of applying, to serve as a basis for irrigation practice, for designing canals, pumping plants, and farm ditches, for formulating ditch regulations and contracts, and for the granting and adjudicating of water rights.....	63,676.93
Pumping for irrigation: Study of the adaptation of pumping machinery for the supplying of water for irrigation, and determination of the cost of installation, maintenance, and operation of wells and pumping machinery through observation of the operation of pumping plants in the field; and technical investigations to work out improvements in the design of pumps for irrigation.....	7,862.03
Irrigation appliances and equipment: Development of the best general types of structures and equipment for diverting, transporting, dividing, distributing, and applying water used for irrigation, through observation of structures in use and a study of their adaptation to the purpose which they are intended to serve.....	4,840.46
Flow of water for irrigation in ditches, pipes, and other conduits: Determination of the accuracy of formulas for the flow of water in conduits of various kinds and the development of new formulas, in order that conduits may be properly designed to carry the water which they are intended to convey.....	4,455.86
Measurement of water for irrigation: Improvement and standardization of devices for measuring water for irrigation, in order that the economical use of water from the small streams delivered to individual farmers may be insured.....	7,011.80
Customs, regulations, and laws relating to irrigation: Investigations of the effect of customs, regulations, and laws upon the use of water by farmers under irrigation, upon the economical use of water from the standpoint of the public, and upon the success of irrigation development, with a view to suggest desirable changes.....	5,580.54
Drainage of irrigated lands: The devising of methods for reclaiming lands which have been injured by overirrigation, by the rise of ground water due to irrigation, or by waste water from irrigation canals or irrigated lands, and the prevention of injury to irrigated lands from these sources; and the handling of general drainage problems in the sections where irrigation is practiced. (Transferred from Farm Drainage Investigations during the fiscal year 1916).....	2,135.27



Expert advice and assistance: The object of this project is to assist in irrigation development and the improvement of irrigation practices by advising farmers, through correspondence and by personal visits, as to methods and equipment for irrigation...

\$4,788.76

Total..... 114,095.53

#### FARM DRAINAGE INVESTIGATIONS.

Total expenditures as above..... \$101,079.77  
Outstanding liabilities, Aug. 31 (estimated).. 1,809.55  
Unexpended balance (estimated)..... 548.51

Total allotment..... 103,437.83

Distributed among the several subactivities as follows:

Supervision: General direction of farm drainage investigations, including necessary clerical and other routine work, and the purchase of equipment and supplies not properly chargeable to specific projects.... 17,018.55

Construction, operation, and maintenance of drainage improvements: Study of the cost and efficiency of machines and implements for digging ditches and building levees under various conditions of work; study of the sizes, types, and arrangement of pumping equipment suitable for drainage works; investigation of the strength and durability of tile, especially of cement tile in alkaline soils; study of the cost of construction, operation, and maintenance of drainage improvements and an analysis of such costs; and determination of the rate of depreciation of drainage improvements... 2,627.59

Drainage of peat, turf, and muck soils: Investigation of special problems involved in planning and constructing drainage systems for peat, turf, and muck soils, including the determination of the amount of shrinkage or contraction of such soils after drainage improvements have been constructed, the relative advantages and disadvantages of open ditches and tile drains in such soils, the rapidity with which the excess water should be removed from such soils, and the height at which the ground water must be maintained to provide sufficient moisture for profitable agriculture... 1,768.02

Drainage of tillable lands (research): Determination of the proper depth, spacing, and arrangement of tile drains in various types

of soils, the carrying capacities of tile drains, and the effect of drainage upon the soil temperature; ascertaining the amount of water that should be removed by tile drains per day from various kinds of soil under varying conditions of climate and topography; investigation of the effect of drainage on crop yields; and study of the best methods of terracing to prevent washing and gully of hillside farm lands..... \$9,062.27

Drainage of irrigated lands: Investigations of problems relating to the waterlogging of land in arid and semiarid regions, with resulting accumulation of alkali, and dissemination of information as to practical drainage methods, including the gathering and imparting of information on the movement of ground water under varying conditions of the soil and topography to serve as a guide to farmers in planning and constructing drainage works, the value of drainage in removing injurious salts accumulated at or near the ground surface, etc. (Transferred to Farm Irrigation Investigations during the fiscal year 1916).. 23,930.04

Organization, financing, and legal regulations of drainage districts: Study of the organization of drainage districts and the laws under which such districts are formed; investigation of the various methods of financing drainage districts; determination of the effect of customs and drainage laws and regulations upon the economical organization of drainage districts; and study of the various methods of assessing costs of drainage improvements..... 1,823.23

Run-off investigations: Determination of the rates of run-off which must be provided for by drainage channels in reclaiming wet lands and of the sizes of ditches necessary to remove the run-off..... 10,256.27

Drainage of tidal marshes: Investigation of the cause of failure in many attempts made to reclaim tidal marsh land, and determination of the proper arrangement and size of sluice openings and the requisite storage capacity of ditches; includes studies of the methods of embanking and draining such lands, the cost, and the benefits obtained.. 599.23

Drainage of tillable lands (extension): The object of this project is to teach landowners the proper methods of planning and constructing farm drains and terraces and to inform them concerning the benefits to be derived from such improvements..... 16,411.78

#### OFFICE OF MARKETS AND RURAL ORGANIZATION.

*Classification of expenditures for the fiscal year ended June 30, 1916.*

Project.	Salaries.				Travel, station, and field expenses.	Equipment.		
	Statutory.	Lump fund.		Total.		Apparatus, instruments, laboratory.	Furniture.	Miscella- neous.
		In Wash- ington.	Out of Washington.					
1 Administration.....	\$25,711.00	\$13,748.18	.....	\$39,459.18	\$1,196.17	.....	\$355.60	\$2,419.75
2 Marketing and distribution.....	18,610.00	118,417.31	\$13,557.07	150,584.38	46,927.44	.....	4,245.19	7,333.68
3 Investigations and demonstra- tions of cotton standards.	2,840.00	15,200.99	893.75	18,934.74	3,433.17	.....	116.03	174.80
4 Cotton testing.....	3,015.00	14,222.62	595.00	17,832.62	3,057.87	\$75.00	11.25	129.90
5 Investigations of rural organi- zation.	3,777.34	21,066.29	945.08	25,788.71	3,304.22	.....	678.77	513.63
6 Enforcement of the United States cotton-futures act.	.....	60,435.96	7.33	60,443.29	8,041.25	.....	268.90	1,181.89
Total.....	53,953.34	243,091.35	15,998.23	313,042.92	65,960.12	75.00	5,675.74	11,753.65

Drainage of overflowed lands: Promotion of interest in the reclamation of overflowed lands through the making of surveys and the preparation of plans for the drainage of representative districts, the holding of meetings of interested landowners to explain the improvements needed and ways of organizing efficiently, etc., with the view of making such lands available for agriculture..... \$17,147.03

Drainage of swamp lands: Promotion of interest in the reclamation of swamp land through the making of surveys and the preparation of plans for the drainage of representative districts, the holding of meetings of interested landowners to explain the character of improvements needed and the methods which should be pursued in effecting an adequate organization, etc., with the view of utilizing such lands for agricultural purposes..... 2,245.31

Total..... 102,889.32

#### RURAL ENGINEERING INVESTIGATIONS.

Total expenditures as above..... \$13,060.20  
Outstanding liabilities, Aug. 31 (estimated).. 386.32  
Unexpended balance (estimated)..... 358.48

Total allotment..... 13,805.00

Distributed among the several subactivities as follows:

Supervision: General direction of rural engineering investigations, including necessary clerical, drafting, and other routine work and the purchase of equipment and supplies not properly chargeable to specific projects..... 2,018.95

Rural engineering: Investigation of farm domestic water supplies and drainage disposal, the construction of farm buildings, and other rural engineering problems involving mechanical principles; field investigations in the Northwest wheat belt to discover the cause of dust explosions in thrashing machines and to devise preventive measures; assistance to the pathologists and entomologists of the department in devising improved spraying apparatus.. 11,427.57

Total..... 13,446.52

#### IMPROVEMENT OF POST ROADS.

Total expenditures as above..... \$162,920.71  
Unexpended balance..... 34,116.27

Total allotment..... 197,036.98  
Expenditures prior to July 1, 1915..... 302,963.02

Total appropriation..... 500,000.00

The object of this work is to construct improved highways along postal routes for service tests in cooperation with the Post Office Department, States, and counties, for which a special appropriation of \$500,000 was provided under the act of Aug. 24, 1912. The cost of the work to June 30, 1916, is distributed as follows:

Lauderdale County, Ala.....	9,991.48
Boone and Story Counties, Iowa.....	9,999.50
Dubuque County, Iowa.....	14,605.88
Bath County, Ky.....	6,300.00
Montgomery County, Ky.....	6,800.00
Cumberland County, Me.....	65,000.00
Montgomery County, Md.....	14,700.00
Leflore County, Miss.....	50,000.00
Davie County, N. C.....	16,099.25
Iredell County, N. C.....	5,439.60
Forsyth County, N. C.....	3,555.25
McDowell County, N. C.....	9,038.35
Licking County, Ohio.....	63,971.25
Muskingum County, Ohio.....	43,826.95
Jackson County, Oreg.....	9,999.98
Aiken County, S. C.....	10,000.00
Dillon County, S. C.....	34.50
Loudon County, Tenn.....	10,800.00
Montgomery County, Tenn.....	10,000.00
Bexar County, Tex.....	14,110.00
Comal County, Tex.....	21,365.72
Guadalupe County, Tex.....	3,050.00
Hays County, Tex.....	23,020.00
Travis County, Tex.....	9,520.58
Caroline County, Va.....	1,906.07
Hanover County, Va.....	9,000.00
Spotsylvania County, Va.....	6,849.37
Fairfax County, Va.....	16,900.00

Total..... 465,883.73

#### OFFICE OF MARKETS AND RURAL ORGANIZATION.

*Classification of expenditures for the fiscal year ended June 30, 1916.*

Stationery.	Rent.	Telegraph, telephone, and postage.	Freight, express, and drayage.	Furnishing of heat, light, power, electricity.	Forage purchased in bulk.	Fuel.	Specified items not otherwise classified.	Miscellaneous supplies, services, etc.	Total.	
\$1,266.06		\$201.24	\$2.09					\$1,810.95	\$46,711.04	1
7,905.24	\$593.86	7,014.52	483.73					6,391.04	231,479.08	2
121.37	25.00	15.71	39.93					4,107.60	26,968.35	3
585.57		11.50	279.59					7,370.89	29,354.19	4
1,193.12		40.71	40.29					1,159.29	32,718.74	5
575.72	2,468.68	1,964.40	1,183.38					24,346.80	100,474.31	6
11,647.08	3,087.54	9,248.08	2,029.01					45,186.57	467,705.71	



## PROJECT STATEMENTS.

ADMINISTRATION.		
Total expenditures as above.....	\$46,711.04	
Outstanding liabilities, Aug. 31 (estimated)...	778.48	
Unexpended balance (estimated).....	1,471.48	
Total allotment.....	48,961.00	
Supervision of the investigational, experimental, demonstrational, and regulatory work conducted by this office, and the execution of the necessary administrative details connected therewith.....	47,489.52	
MARKETING AND DISTRIBUTION.		
Total expenditures as above.....	\$231,479.08	
Outstanding liabilities, Aug. 31 (estimated)...	18,718.58	
Unexpended balance (estimated).....	6,412.34	
Total allotment.....	256,610.00	
Distributed among the several subactivities as follows:		
Cotton handling and marketing: Investigation of the commercial processes involved in the handling, marketing, and utilization of cotton, in order to make recommendations as to improvements and economies; investigational work in connection with the organization of communities of cotton growers to market their product; and experiments regarding the advantage of growing cotton from pure seed in these communities.....	17,666.63	
Cooperative purchasing and marketing: Investigation of cooperative and semicooperative associations formed for the purpose of marketing and distributing or purchasing farm products and of the forms of organization and methods of management best suited to their use.....	17,366.57	
Market surveys, methods, and costs: Comprehensive and detailed studies of the origin, movement, distribution, and consumption of market supplies of farm products, especially perishables, in order to accumulate and disseminate useful information relating to all phases of the subject, including available and prospective production; movement of products into storage, foreign shipments, or consumption; the various agencies by and through which farm products are handled, distributed, stored, and sold; costs of doing business through existing marketing channels; methods of inspection in vogue; and the value and practicability of an inspection service; study of existing sources of market information, price quotation, and market forecasts, especially with a view to determine the cost, value, and practicability of a comprehensive market news service.....	101,505.18	
Market grades and standards: The object of this work is to encourage and educate growers and shippers properly to prepare their products for market and to show them the vital need of fixed grades and standards for universal use, with a view to the ultimate national standardization of market grades, weights, measures, and packages or containers.....	11,451.05	
City marketing and distribution: Studies of the distribution and marketing of farm products in cities, with the object of determining and encouraging the practice of the best methods and of extending advisory aid to cities in establishing economical and efficient marketing systems.....		\$7,284.42
Transportation and storage: Investigation of the service furnished throughout the United States by common carriers of every kind in the matter of transportation of farm products, particularly perishables, and of the need for more and better service in individual sections, with a view to cooperate with the carriers in the inauguration of such service; imparting of information to carriers as to the needs of shippers, and instructing shippers as to their rights, duties, and responsibilities in the transportation of farm products; determination of the economic loss of foodstuffs from lack of sufficient storage, both cold and common, and on account of storage improperly located; and obtaining from transportation companies more storage-in-transit privileges on farm products.....		11,188.94
Marketing by parcel post and express: Determination of the feasibility, both from the physical and the economic viewpoint, of marketing farm products by parcel post and by express from producer to consumer direct, and ascertaining the best methods to be used.....		12,285.18
Marketing live stock, meats, and animal by-products: Conduct of a thorough study of existing markets and methods of marketing live stock through the large central and small local markets, including transportation, yardage, sale, and delivery of live stock, and the slaughter, packing, and wholesale and retail distribution of meat products and by-products derived therefrom; classification and grading of live stock and meats; and other allied subjects: with a view to improve the methods and reduce the cost of marketing live stock, meats, and animal by-products.....		17,570.40
Marketing business practice: Investigation of the business practices of cooperative and farmers' marketing, distributing, purchasing, and rural business organizations and other marketing agencies, with special reference to their accounting systems and methods of auditing, business organization, and financing, and the devising of suitable accounting systems for these organizations and agencies for the purpose of increasing their efficiency.....		17,470.92
Marketing grain, hay, and seeds: Study of the primary marketing of spring and winter wheat, including especially the uses and abuses of dockage in the first sale, and the comparison of results in the case of grain passing from the farmer to the line, independent, or farmers' mutual elevator; the various methods of marketing corn and other grains and seeds both for domestic and export trade; future grain transactions and exchange practices; the "spread" in the marketing of various grains; grain storage, scalping, mixing and warehousing practices, track selling, and other subjects, in order to suggest possible improvements and economies in marketing the grain crop.....		10,996.75
Marketing cotton seed and its products: Investigation of present methods of handling, marketing, and utilizing cotton seed and some of its crude products, with a view to suggesting means whereby improvements may be made and economies effected; and studies regarding future		

trading, the establishment of standard grades, and the standardization of conditions under which cotton seed and its products are handled and stored .....	\$4, 634. 23	INVESTIGATIONS OF RURAL ORGANIZATION.	
Marketing dairy products: Study of the marketing of dairy products and dairy substitutes, including methods and costs of their preparation for market, market grades and classification of dairy products, market quotations and quotation systems, market requirements, market conditions, and related subjects, in order to suggest measures by which market conditions and methods may be improved and the cost of marketing dairy products reduced.....	12, 124. 57	Total expenditures as above.....	\$32, 718. 74
Cotton warehousing investigations: Accumulation and dissemination of useful information relating to the warehousing of cotton, insurance rates while in storage, and benefits, including better arrangements for financing, to be derived from conserving cotton in storage houses; the construction of different types of warehouses, and the relation of present methods and practices of compressing cotton to warehousing.....	7, 439. 44	Outstanding liabilities, Aug. 31 (estimated).....	162. 06
Miscellaneous problems in marketing and cooperation: Cooperation with governmental agencies already conducting investigations in the marketing of specific products; assistance in the development of foreign markets, where practicable, especially by a study of foreign methods and outlets; and study of new lines of work relating to the organization of rural communities and to the preparation, handling, preservation, and marketing of animal, food, and miscellaneous products not specifically provided for under other projects.....	1, 213. 38	Unexpended balance (estimated).....	6, 816. 54
Total.....	250, 197. 66	Total allotment.....	39, 697. 34
INVESTIGATIONS AND DEMONSTRATIONS OF COTTON STANDARDS.		Distributed among the several subactivities as follows:	
Total expenditures as above.....	\$26, 968. 35	Rural credit, insurance, and communication: Investigation of the problems relating to the organization of rural communities for the purpose of obtaining better credit, insurance, and communication facilities by the accumulation and dissemination of useful information relating to the various phases of the subject....	20, 239. 55
Outstanding liabilities, Aug. 31 (estimated).....	239. 13	Rural social and educational activities: Improvement of social and educational conditions in rural communities by the accumulation and dissemination of useful information growing out of the study of typical communities with reference to their social and educational needs, the work of their existing forms of organization, and the possibilities for improvement through organized activity; investigation of methods of encouraging social organization activities; and study of means of improving social, economic, and educational conditions of women and children through the work of women's rural organizations.....	12, 641. 25
Unexpended balance (estimated).....	1, 112. 52	Total.....	32, 880. 80
Total allotment.....	28, 320. 00	ENFORCEMENT OF THE UNITED STATES COTTON-FUTURES ACT.	
Field and laboratory investigations and demonstrations of standards for the different grades, qualities, and conditions of cotton, and investigations of the ginning, grading, stapling, baling, marking, compressing, and tare of cotton.....	27, 207. 48	Total expenditures as above.....	<sup>1</sup> \$100, 474. 31
COTTON TESTING.		Outstanding liabilities, Aug. 31 (estimated).....	2, 350. 80
Total expenditures as above.....	\$29, 354. 19	Unexpended balance (estimated).....	8, 956. 56
Outstanding liabilities, Aug. 31 (estimated).....	2, 223. 72	Total allotment.....	111, 781. 67
Unexpended balance (estimated).....	1, 437. 09	Distributed among the several subactivities as follows:	
Total allotment.....	33, 015. 00	Administration: Supervision and direction of the investigational and regulatory activities connected with the enforcement of the United States cotton-futures act and the rules and regulations of the Secretary of Agriculture thereunder, and the performance of such executive and clerical duties as may be necessary in connection therewith.....	10, 368. 05
Determination of the waste, tensile strength, and bleaching qualities of the different grades, classes, and varieties of cotton, in order to ascertain their commercial and spinning value and to demonstrate the results of such tests.....	31, 577. 91	Investigations of future and spot markets for cotton: Study of future markets for cotton to ascertain how accurately their future quotations reflect spot values and to secure general information as to conditions within the future exchanges; investigation of spot markets to determine their fitness for designation as bona fide spot markets; assembling of daily reliable quotations for cotton from each of the designated spot markets; and inspection of the designated bona fide spot markets from time to time.....	18, 931. 82
		Determination of disputes: Hearing and determining disputes as to the grade,	

<sup>1</sup> Includes \$36,781.67 expended to June 30, 1916, out of continuing appropriation of \$150,000 made available by a special act of Congress approved Aug. 18, 1914.



quality, or length of staple of cotton tendered in settlement of future contracts made in compliance with section 5 of the cotton-futures act and referred to the Secretary of Agriculture under the

terms of the act; and drawing up memoranda of conclusions upon which are based the Secretary's findings in cases of dispute..... \$26,065.67

### INSECTICIDE AND FUNGICIDE BOARD.

*Classification of expenditures for the fiscal year ended June 30, 1916.*

Project.	Salaries.				Travel, station, and field expenses.	Equipment.		
	Statutory.	Lump fund.		Total.		Apparatus, instruments, laboratory.	Furniture.	Miscella- neous.
		In Wash- ington.	Out of Washington.					
Enforcement of the insecticide act.....	.....	\$52,998.93	\$14,128.01	\$67,126.94	\$9,152.56	\$243.64	\$793.44	\$889.96

### PROJECT STATEMENT.

#### ENFORCEMENT OF THE INSECTICIDE ACT.

Total expenditures as above.....	\$88,643.26
Outstanding liabilities, Aug. 31 (estimated).....	6,513.20
Unexpended balance (estimated).....	4,843.54
Total allotment.....	<u>100,000.00</u>

### FEDERAL HORTICULTURAL BOARD.

*Classification of expenditures for the fiscal year ended June 30, 1916.*

Project.	Salaries.				Travel, station, and field expenses.	Equipment.		
	Statutory.	Lump fund.		Total.		Apparatus, instruments, laboratory.	Furniture.	Miscella- neous.
		In Wash- ington.	Out of Washington,					
Enforcement of the plant-quarantine act.....	.....	\$29,536.96	\$16,720.15	\$46,257.11	\$9,865.10	\$59.55	\$547.52	\$489.81

### PROJECT STATEMENT.

#### ENFORCEMENT OF THE PLANT-QUARANTINE ACT.

Total expenditures, as above.....	\$59,889.34
Outstanding liabilities, Aug. 31 (estimated).....	198.28
Unexpended balance (estimated).....	<sup>1</sup> 97,852.94
Total allotment.....	<u>157,940.56</u>

Distributed among the several subactivities as follows:

Administration: To carry on administrative and clerical work necessary for the proper enforcement of the plant-quarantine act.....	19,902.10
Control of entry of plants and plant products under regulation: To provide for foreign inspection and certification of nursery stock and other plants and plant products under regulation; to secure prompt notification of arrival and proposed distribution; and to provide for the proper inspection, either at port of entry or at place of destination of such imports.....	16,268.06

<sup>1</sup> Includes \$19,821.23 from the continuing appropriation of \$25,000 made available under the act of Aug. 20, 1912, and \$78,030.69 from the appropriation of \$100,000 for domestic potato quarantine carried in the act of Mar. 4, 1915.

Preparation and distribution of the official cotton standards of the United States, promulgated by the Secretary of Agriculture on Dec. 15, 1914, under section 9 of the United States cotton-futures act;

and inspection and condemning of these standards when necessary and replacing them upon request.....

\$47, 459. 57

Total..... 102, 825. 11

### INSECTICIDE AND FUNGICIDE BOARD.

*Classification of expenditures for the fiscal year ended June 30, 1916.*

Stationery.	Rent.	Telegraph, telephone, and postage.	Freight, express, and drayage.	Furnishing of heat, light, power, electricity.	Forage purchased in bulk.	Fuel.	Specified items not otherwise classified.	Miscellaneous supplies, services, etc.	Total.
\$723. 31	.....	\$147. 71	\$762. 18	.....	.....	\$307. 50	<sup>1</sup> \$333. 71	\$8, 162. 31	\$88, 643. 26

<sup>1</sup> Cleaning and toilet supplies, \$316.87; mechanics' and electricians' supplies, \$16.84.

Distributed among the several subactivities as follows:

Administration: Supervisory work in connection with the enforcement of the insecticide act, including maintenance of necessary records, fiscal operations, correspondence, inspection work, etc.....	\$35, 555. 98
Chemical, microscopic, and bacteriological examination of insecticides and fungicides other than those used on horses, cattle, sheep, swine, or goats.....	33, 146. 36
Testing the efficacy of fungicides and the action on vegetation of insecticides and fungicides.....	8, 991. 54
Testing the efficacy of insecticides and the action on vegetation of insecticides.....	10, 216. 51
Chemical and bacteriological examination of insecticides and fungicides used on horses, cattle, sheep, swine, or goats, and efficacy tests of same.....	7, 246. 07
Total.....	95, 156. 46

### FEDERAL HORTICULTURAL BOARD.

*Classification of expenditures for the fiscal year ended June 30, 1916.*

Stationery.	Rent.	Telegraph, telephone, and postage.	Freight, express, and drayage.	Furnishing of heat, light, power, electricity.	Forage purchased in bulk.	Fuel.	Specified items not otherwise classified.	Miscellaneous supplies, services, etc.	Total.
\$357. 19	\$426. 26	\$373. 11	\$239. 93	\$6. 45	.....	.....	<sup>1</sup> \$138. 56	\$578. 75	\$59, 889. 34

<sup>1</sup> Publication of quarantine notices, \$138.56.

Foreign plant quarantines: To prevent, under existing quarantines, the entry of plant material affected with white-pine blister rust, potato wart, powdery scab of potato, Mexican fruit fly, avocado weevil, the pink bollworm of cotton, European pine-shoot moth, citrus canker, and other citrus diseases, <i>Schlerospora maydis</i> disease of Indian corn, and insect enemies and plant diseases of sugar cane; and to provide for like control by quarantine of any new danger that may arise.....	\$2, 041. 24
Domestic plant quarantines: To prevent, under existing quarantines, further distribution within the United States of the Mediterranean fruit fly and melon fly, the gipsy moth and brown-tail moth, date-palm scale insects, the powdery scab of potato, the pink bollworm of cotton, and insect enemies and plant diseases of sugar cane; and by future quarantine to control any new pest that may appear.....	10, 716. 51
Inspection and certification of potatoes for interstate shipment from areas quarantined for powdery scab: To prevent the movement of diseased potatoes from quarantined areas.....	9, 056. 61
Plant quarantine investigations: Investigation of insect and plant-disease conditions as a basis for needed quarantine action.....	2, 103. 10
Total.....	60, 087. 62



## ACQUISITION OF LANDS UNDER THE WEEKS FORESTRY LAW.

Classification of expenditures for the fiscal year ended June 30, 1916.

	Project.	Salaries.			Travel, station, and field expenses.	Equipment.			
		Statutory.	Lump fund.			Total.	Apparatus, instruments, laboratory.	Furniture.	Miscella- neous.
			In Wash- ington.	Out of Washington.					
1	National Forest Reservation Commission	-----	\$128.75	-----	\$128.75	-----		-----	
	Acquisition of lands:	-----		-----		-----		-----	
2	Forest Service.....	-----	9,068.00	\$72,643.92	81,711.92	\$20,952.18		\$494.18	
3	Solicitor's office.....	-----	2,400.00	47,021.54	49,421.54	12,017.34		-----	
4	Purchase of lands.....	-----						-----	
	Total.....	-----	11,596.75	119,665.46	131,262.21	32,969.52		494.18	

## PROJECT STATEMENTS.

## NATIONAL FOREST RESERVATION COMMISSION.

Total expenditures as above..... \$149.79  
 Unexpended balance..... 24,850.21

Total appropriation..... 25,000.00

This commission, consisting of the Secretary of War, the Secretary of the Interior, the Secretary of Agriculture, two members of the Senate, and two members of the House of Representatives, considers and passes upon lands recommended for purchase under the provisions of section 6 of the Weeks forestry law (act approved Mar. 1, 1911) and fixes the price or prices at which such lands may be purchased.. 149.79

## ACQUISITION OF LANDS.

Total expenditures as above..... \$1,458,649.24  
 Unexpended balance, June 30, 1916 (available for further disbursement)..... 1,356,523.80

Total available, July 1, 1915..... 5,023,888.04

The cost of the work, including administrative expenses and purchase of lands, is distributed as follows:

Forest Service: As provided in sec. 6 of the Weeks forestry law, the Forest Service, by direction of the Secretary of Agriculture, examines, locates, and recommends for purchase such lands as in the judgment of the Secretary may be necessary to the regulation of the flow of navigable streams, reporting to the National Forest Reservation Commission the results of such examinations..... \$112,852.14  
 Solicitor's office: As provided in sec. 8 of the Weeks forestry law, the Solicitor's office of the Department of Agriculture, by direction of the Secretary of Agriculture, makes all the necessary examinations of title records to secure the safe title in the United States to the lands to be acquired under this law, no payment being made, however, until the title is satisfactory to and approved by the Attorney General and vested in the United States..... 62,389.31  
 Purchase of lands: During the fiscal year ended June 30, 1916, the payments for the actual purchase of lands acquired under the Weeks forestry law amounted to.... 1,283,407.79  
 Total..... 1,458,649.24

<sup>1</sup> Includes \$3,151,732.00, covered by executed contracts on which no extra payment had been made up to June 30, 1916, and \$413,506.20, balance available for encumbrance during the fiscal year 1917.

## ACQUISITION OF LANDS UNDER THE WEEKS FORESTRY LAW.

Classification of expenditures for the fiscal year ended June 30, 1916.

Stationery.	Rent.	Telegraph, telephone, and postage.	Freight, express, and drayage.	Furnishing of heat, light, power, electricity.	Forage purchased in bulk.	Fuel.	Specified items not otherwise classified.	Miscellaneous supplies, services, etc.	Total.	
							<sup>1</sup> \$21.04		\$149.79	1
	\$165.00	\$106.20	\$617.99			\$18.00	<sup>2</sup> 135.50	\$3,651.17	112,852.14	2
\$43.50	639.99	66.25	24.54			22.25		153.90	62,389.31	3
							\$1,283,407.79		1,283,407.79	4
43.50	804.99	172.45	642.53			40.25	1,283,564.33	8,805.07	1,458,799.03	

<sup>1</sup> Printing.<sup>2</sup> Options for purchase of lands.<sup>3</sup> Lands purchased.

## SUMMARY OF EXPENDITURES OF THE DEPARTMENT OF AGRICULTURE.

The total expenses of the Department of Agriculture for the fiscal year ended June 30, 1916, were \$24,629,444, of which amount \$24,239,108.69 was paid and \$390,335.31 represented outstanding liabilities on Aug. 31, 1916. The payments were classified as follows:

Statutory salaries.....	\$4,807,735.94	Forage purchased in bulk.....	\$141,273.08
Lump-fund salaries:		Fuel.....	49,665.97
In Washington.....	2,486,543.65	Land, including acquisitions under the	
Out of Washington.....	10,083,915.82	Weeks law.....	1,296,543.29
Travel, station, and field expenses.....	2,056,610.89	Purchase of animals for experimental and	
Equipment:		control purposes.....	313,474.34
Apparatus, instruments, and laboratory.	120,007.81	Road construction under contracts.....	162,920.71
Furniture.....	77,684.78	Unclassified items, including mechanics',	
Miscellaneous.....	604,111.05	engineers', and electricians' supplies;	
Stationery.....	182,447.36	printing, engraving, lithographing, and	
Rent.....	397,147.85	binding; structures and parts and non-	
Telegraph, telephone, and postage.....	317,853.59	structural improvements to land; sub-	
Freight, express, and drayage.....	195,943.21	sistence and care of animals and storage	
Furnishing of heat, light, power, and elec-		and care of vehicles; cleaning and toilet	
tricity.....	25,854.37	supplies; and advertising and publication	
		of notices.....	113,709.92
		Miscellaneous supplies and services.....	805,665.06
		Total.....	24,239,108.69









